VDC SPECIALTY PLUMBING PRODUCTS

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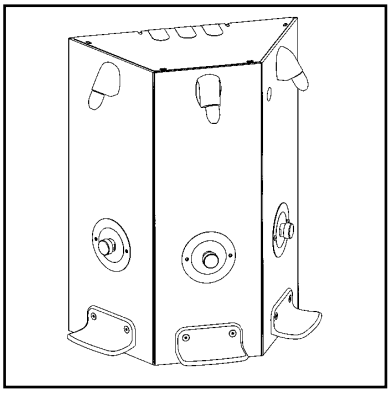
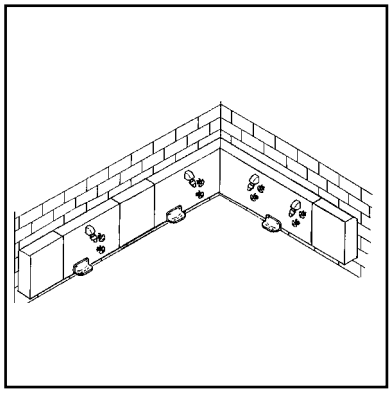
VESCERA DISTRIBUTING COMPANY, Inc.

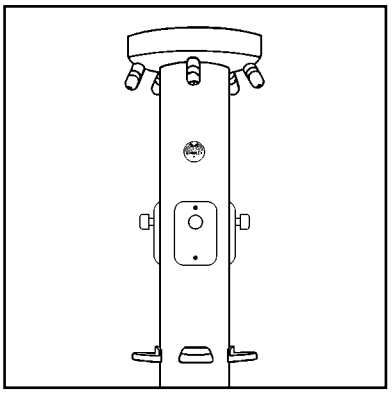
2910 Burnet Ave ~ Syracuse, NY 13206 ~ (800) 875-7952 ~ Fax: (315) 422-9125 ~ email: sales@vdcspecialtyplumbingparts.com

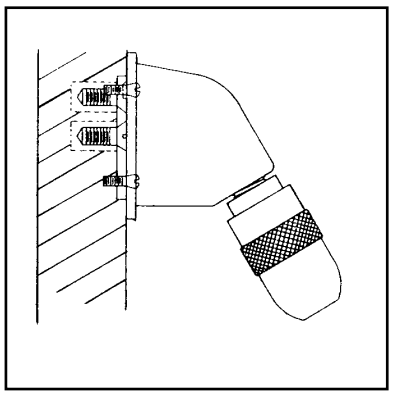


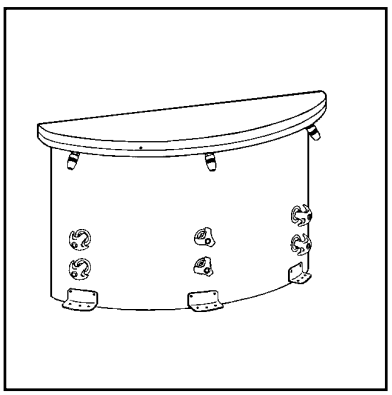


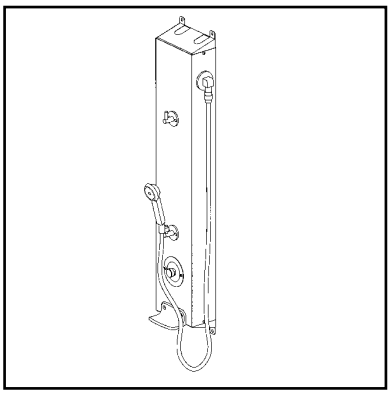
shower

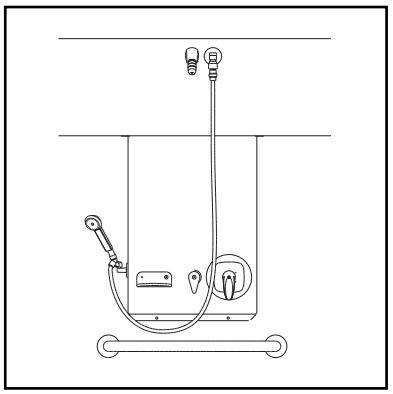
operation & service guide

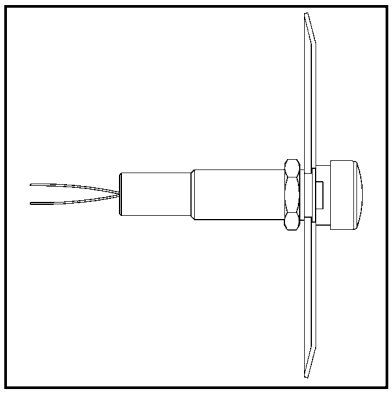












Bradley

FOR MORE INFORMATION OR TO PLACE A ORDER CALL 800-875-7952

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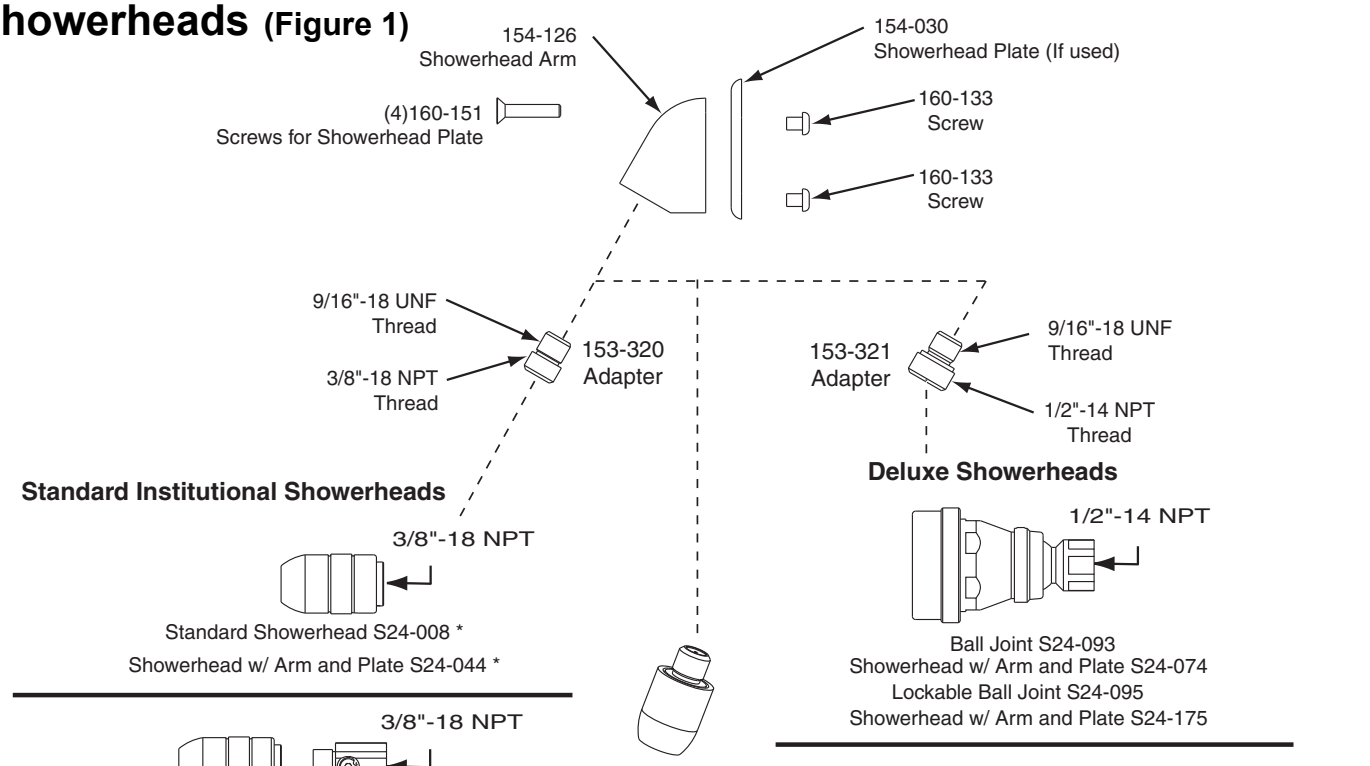
1C Showerheads (Figure 1)



Standard Showerhead S24-008 *
Showerhead w/ Arm and Plate S24-044 *

Ball Joint S24-093
Showerhead w/ Arm and Plate S24-074
Lockable Ball Joint S24-095
Showerhead w/ Arm and Plate S24-175

Allen Key Volume Control S24-111 *
Showerhead w/ Arm and Plate S24-046 *

Allen Key Volume Control Ball Joint S24-099
Showerhead w/ Arm and Plate S24-171
Allen Key Volume Control Lockable Ball Joint S24-101
Showerhead w/ Arm and Plate S24-176

Lever Handle Volume Control S24-112 *
Showerhead w/ Arm and Plate S24-045 *

Lever Handle Volume Control Ball Joint S24-096
Showerhead w/ Arm and Plate S24-074D
Lever Handle Volume Control Lockable Ball Joint S24-098
Showerhead w/ Arm and Plate S24-170

Lockable Ball Joint Assembly S24-108 *
Showerhead w/ Arm and Plate S24-127 *

Economy Soft Flow With Ball Joint 269-919
Showerhead w/ Arm and Plate S24-138

Lockable Ball Joint Assembly With Allen Key Volume Control S24-109 *
Showerhead w/ Arm and Plate S24-130 *

Lockable Ball Joint Assembly With Lever Handle Volume Control S24-110 *
Showerhead w/ Arm and Plate S24-133 *

*** Add suffix G for 1.5 GPM Flow Restrictor (Example: S24-044G)**

Bradtrol Valves

How they Work: Refer to Figure 3.
Counter-clockwise rotation of the handle and cam causes the rubber sleeve & insert to contract which uncovers the ports in the cartridge allowing water to flow through the valve body.

Troubleshooting

PROBLEM	*CAUSE*	*SOLUTION*
Water drips from shower head.	Mineral or foreign material build up on cartridge ports	Clean or replace cartridge and sleeve & insert
Water will not shut off.	Sleeve & insert split	Replace sleeve & insert

Bradtrol Valve (Figure 3)

For Individual Showers

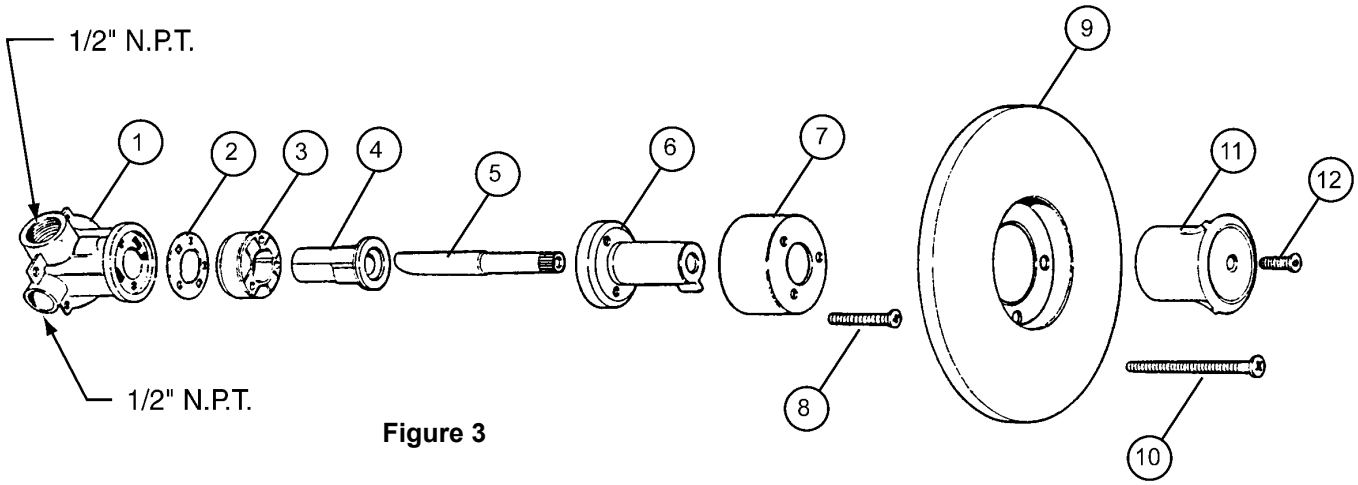


Figure 3

Parts List

Item	Part No.	Description	Assembly	Valve Assembly Part No. 300-0888	Repair Kit Part No. 300-0760
			Qty		
1	300-0876	Valve Body	1		
2	300-0602	Gasket	1	1	1
3	300-0601	Cartridge	1	1	1
4	300-0935	Sleeve & Insert	1	1	1
5	300-1036	Cam	1	1	
6	300-0306	Cam Bearing	1	1	
7	300-0877	Cam Bearing Cover	1	1	
8	300-0312	Screw	3	3	
9	300-0379	Escutcheon	1		
10	160-290	Screw	2		
11	128-032	Handle	1		
12	160-225	Screw	1		
	301-0140	Instructions			1

Bradtrol Valve (Figure 4)

For Econo-Wall, Wall Saver And Panelons

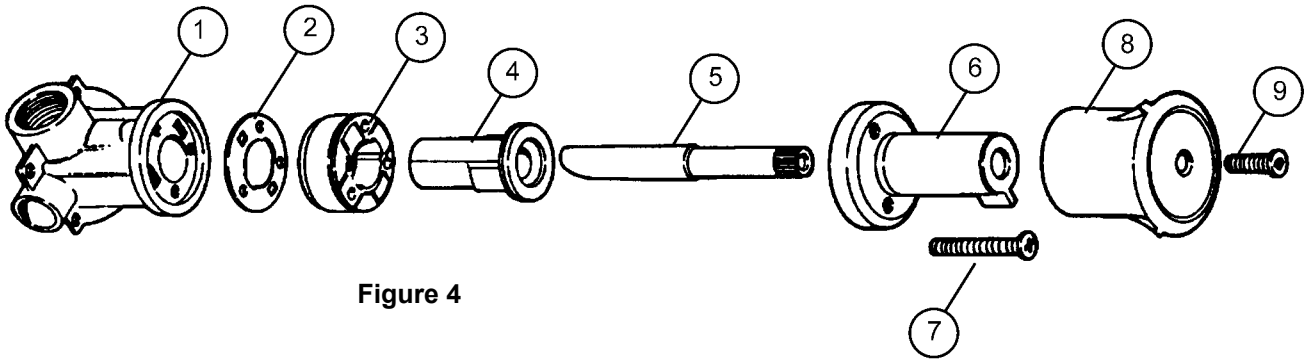


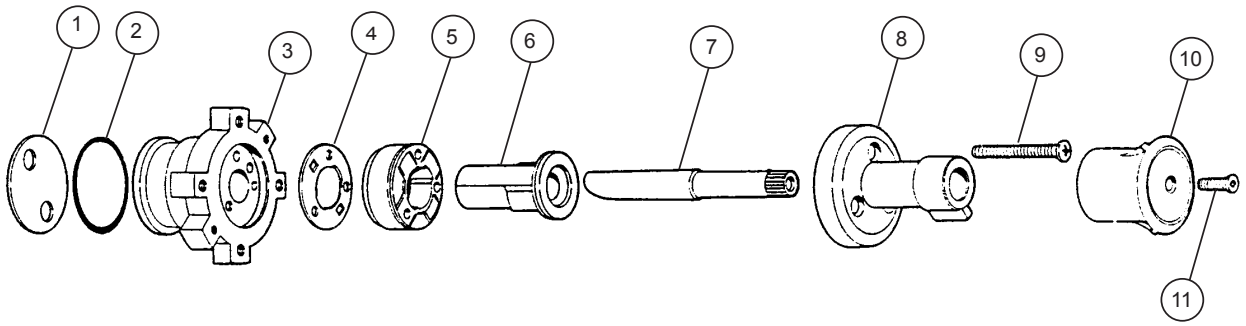
Figure 4

Parts List

Item	Part No.	Description	Assembly	Valve Assembly S21-025	Repair Kit 300-0760
			Qty		
1	300-0875	Valve Body	1		
2	300-0602	Gasket	1	1	1
3	300-0601	Cartridge	1	1	1
4	300-0935	Sleeve & Insert	1	1	1
5	120-020A	Cam	1	1	
6	121-015	Cam Bearing	1	1	
7	300-0312	Screw	3	3	
8	128-032	Handle	1		
9	160-225	Screw	1		
	301-0140	Instructions			1

Bradtrol Valve (Figure 5)

For Column Showers



Parts List

Figure 5

Item	Part No.	Description	Assembly	Valve Assembly Part No. S21-023	Repair Kit Part No. 300-0760
			Qty		
1	125-001BS	Gasket	1		
2	169-269	Gasket	1		
3	118-094	Adapter	1	1	
4	300-0602	Gasket	1	1	1
5	300-0601	Cartridge	1	1	1
6	300-0935	Sleeve & Insert	1	1	1
7	120-020	Cam	1	1	
8	121-015	Cam Bearing	1	1	
9	300-0312	Screw	3	3	
10	128-032	Handle	1		
11	160-225	Screw	1		
	301-0140	Instructions			1

Escutcheon and screws (not shown) must be ordered separately. as follows:

150-061 Escutcheon, 6-Person Shower
150-062 Escutcheon, 2-5 Person Shower
160-176 Screw for upper escutcheon note
160-177 Screw for lower escutcheon hole

NOTE: If you want to reverse supplies, rotate cam 180° against cartridge, reassemble handle.

Complete Replacement Valve:
S65-055 (2-5 Person)
S65-055A (6 Person)

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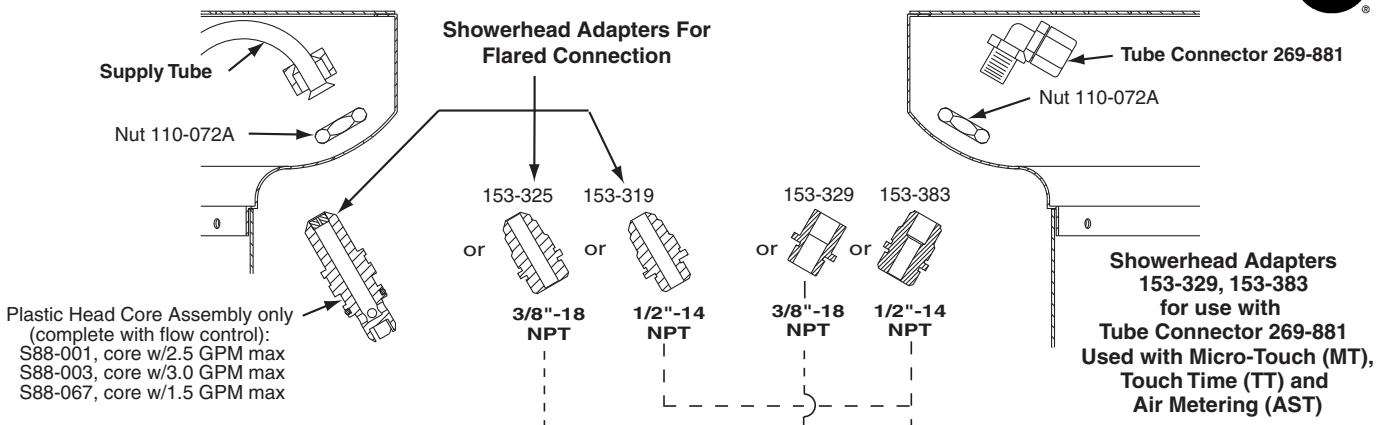
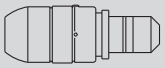
Column Shower & Wall Saver Showerheads (Figure 6)



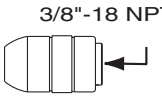
Standard Institutional Showerheads

Vandal Resistant

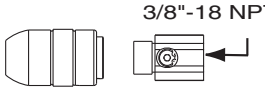
For vandal prone areas, substitute S24-008 and 153-325 in place of S24-072



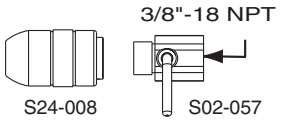
Plastic Showerhead Assembly S24-072 *



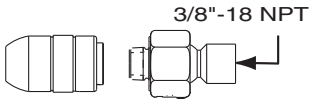
Standard Showerhead S24-008 *



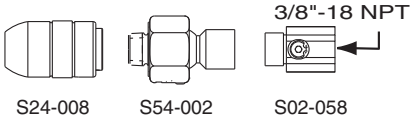
Allen Key Volume Control S24-111 *



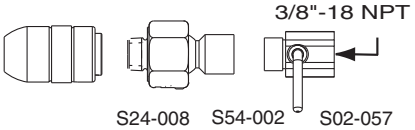
Lever Handle Volume Control S24-112 *



Lockable Ball Joint Assembly S24-108 *



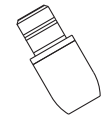
Lockable Ball Joint Assembly With Allen Key Volume Control S24-109 *



Lockable Ball Joint Assembly With Lever Handle Volume Control S24-110 *

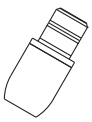
SX Showerhead

Fixed direction spray pattern is adjustable only through orifice with 1/8" Allen Key



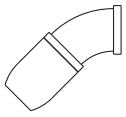
SX Showerhead
Includes adaptor and flow Control S24-090 *

(For use with Flared Connection Supply Tubes)



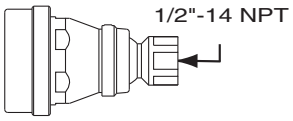
SX Showerhead
1/4"-18 NPT Threaded Connector, includes adaptor and flow Control S24-140 *

(For use with Tube Connector 269-881)

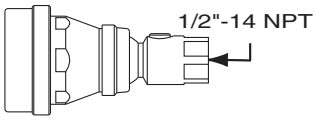


Beach Shower Foot Spray S24-092

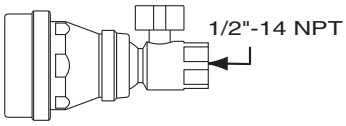
Deluxe Showerhead



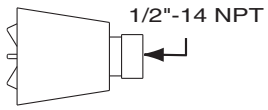
Ball Joint S24-093
Lockable Ball Joint S24-095



Allen Key Volume Control Ball Joint S24-099
Allen Key Volume Control Lockable Ball Joint S24-101



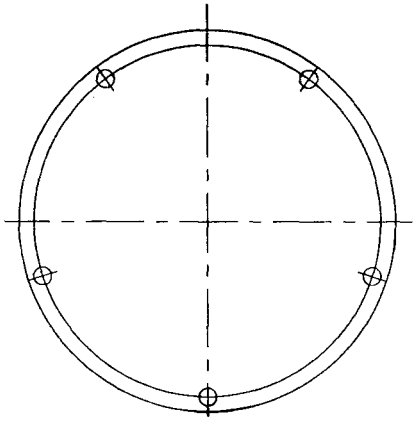
Lever Handle Volume Control Ball Joint S24-096
Lever Handle Volume Control Lockable Ball Joint S24-098



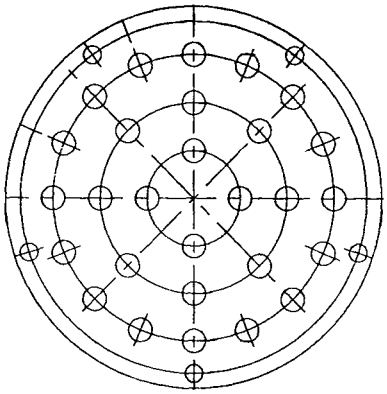
Economy Soft Flow With Ball Joint 269-919

*** Add suffix G for 1.5 GPM Flow Restrictor (Example: S24-111G)**

Column Shower Drains (Figure 7)

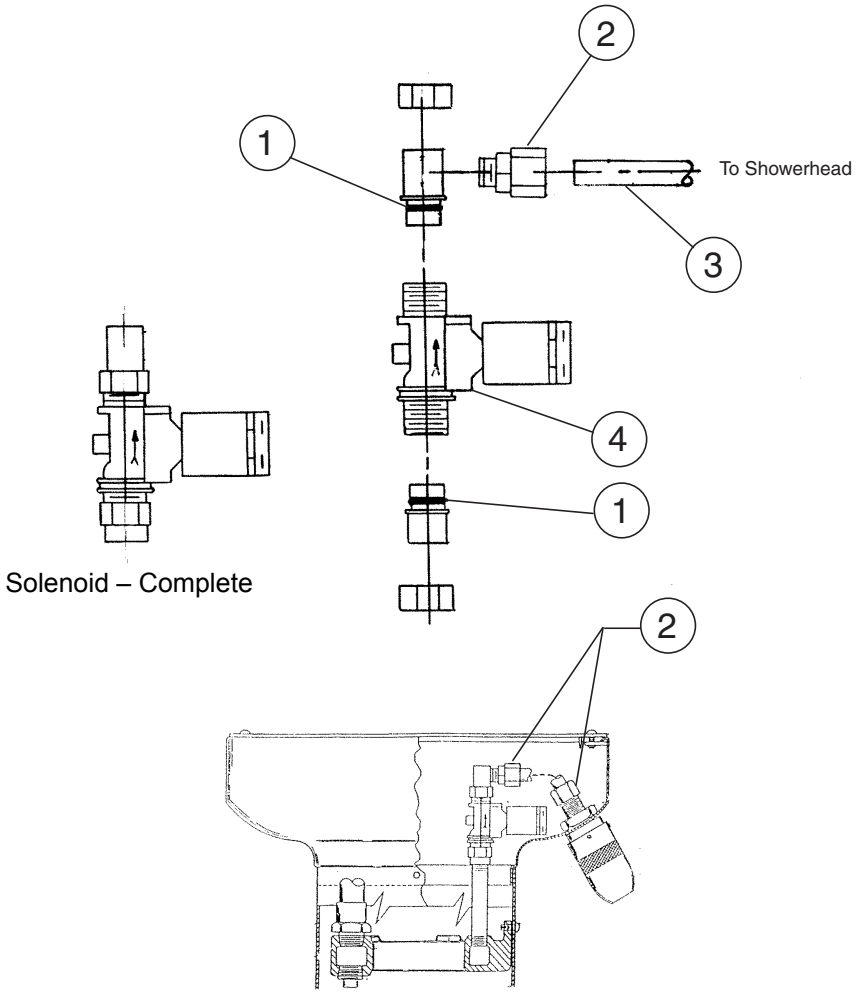


Column Shower Drain Cover
(Less Drain Holes)
Part No. 107-287



Column Shower Drain Cover
(With Drain Holes)
Part No. 107-286

Column Shower Solenoid — Müller (Figure 8)



Parts List

Item	Part No.	Description	Solenoid Assembly S07-053 Qty	Plastic Tubing Qty
1	125-001EB	O-Ring	2	
2	269-882	Connector	1	
3	R68-60000-11	Plastic Tubing (2-5 Person)		1
3	R68-60000-11	Plastic Tubing (6 Person)		1
4	S07-050	Solenoid	1	

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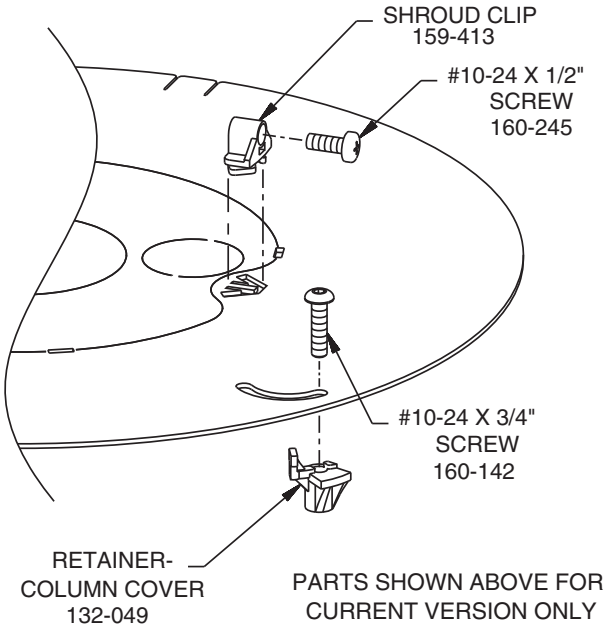
Column Shower Covers

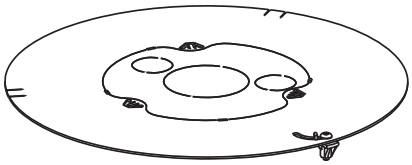
NOTE: CURRENT VERSION EFFECTIVE JANUARY, 2004
(CURRENT AND OLD ASSEMBLIES ARE INTERCHANGEABLE).



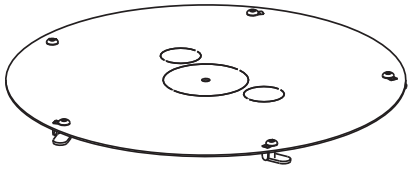
PARTS SHOWN ABOVE FOR CURRENT VERSION ONLY

2-5 PERSON - NO SHROUD

S04-014A - CURRENT

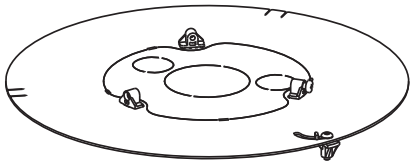


S04-014A - PRIOR TO 2004
(THIS VERSION NO LONGER AVAILABLE)

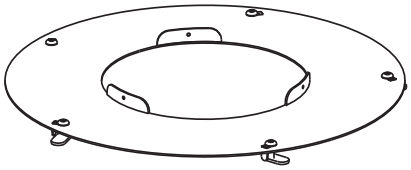


2-5 PERSON - WITH SHROUD

S04-014A PLUS
(3) 159-413 SHROUD CLIPS
- CURRENT



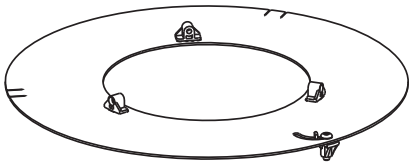
S04-015A - PRIOR TO 2004
(THIS VERSION NO LONGER AVAILABLE)



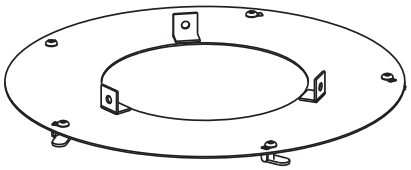
NOTE: WHEN ORDERING A REPLACEMENT COVER, CUSTOMER MUST ORDER THE 159-413 SHROUD CUP (3 REQUIRED) IN ADDITION TO THE S04-014A

2-5 PERSON WITH THERMOBLENDER WITH SHROUD

S04-033 - CURRENT



S04-033 - PRIOR TO 2004
(THIS VERSION NO LONGER AVAILABLE)

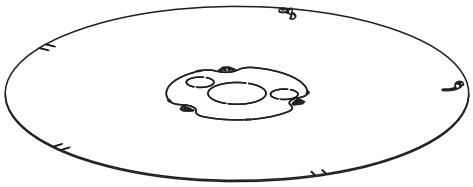


Column Shower Covers *continued...*

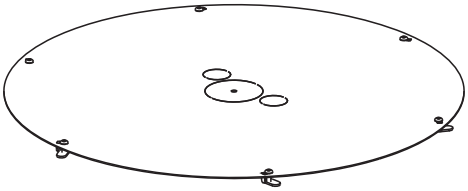
NOTE: CURRENT VERSION EFFECTIVE JANUARY, 2004
(CURRENT AND OLD ASSEMBLIES ARE INTERCHANGEABLE).

6 PERSON - NO SHROUD

S04-019A - CURRENT

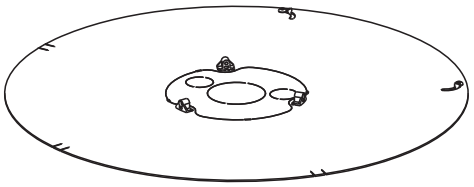


S04-019A - PRIOR TO 2004
(THIS VERSION NO LONGER AVAILABLE)

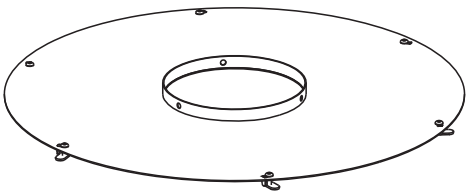


6 PERSON - WITH SHROUD

S04-019A PLUS
(3) 159-413 SHROUD CLIPS
- CURRENT



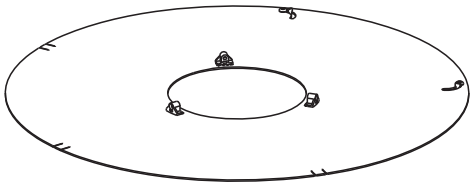
S04-018A - PRIOR TO 2004
(THIS VERSION NO LONGER AVAILABLE)



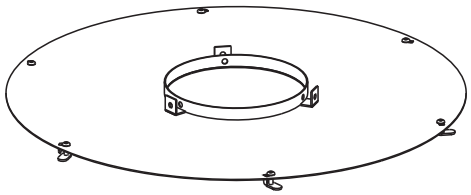
NOTE: WHEN ORDERING A REPLACEMENT COVER, CUSTOMER MUST ORDER THE 159-413 SHROUD CUP (3 REQUIRED) IN ADDITION TO THE S04-019A

6 PERSON WITH THERMOBLENDER WITH SHROUD

S04-032 - CURRENT



S04-032 - PRIOR TO 2004
(THIS VERSION NO LONGER AVAILABLE)



Diverter Shower Valves

How they Work: Refer to Figure 9.
Clockwise rotation of the handle and stem causes the stem and washers (Item 3) to move in the casting and divert the water flow to the shower head. Counter-clockwise rotation of the handle caused the water flow to be diverted to the shower hose.

Troubleshooting

PROBLEM	*CAUSE*	*SOLUTION*
Water drips from handle or bonnet.	O-Ring worn or bonnet insufficiently tightened.	Replace O-Ring or tighten bonnet.
Water will not divert.	Washers (Item 3) worked loose from seat resulting in washer not seating properly.	Replace washers

Diverter Shower Valve (Figure 9)

For Econo-Walls and Column Showers

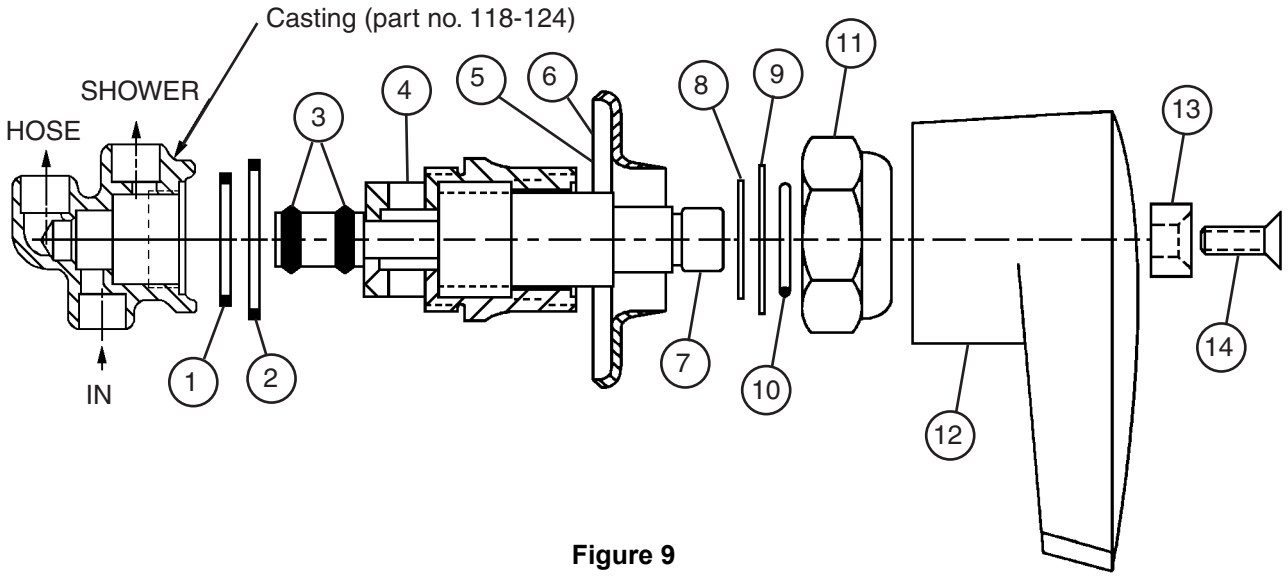


Figure 9

Parts List

Item	Part No.	Description	Column Valve Assembly Part No. S45-323 Qty	Wall Shower Valve Assembly Part No. S45-444 Qty
1	124-001BU	Washer	1	1
2	124-001K	Washer	1	1
3	125-001CJ	Washer	2	2
4	118-126	Valve Body	1	1
5	150-035	Escutcheon - Flat		1
6	150-004	Escutcheon - Column	1	
7	120-028	Stem	1	1
8	142-002BF	Washer	1	1
9	124-001BD	Washer	1	1
10	125-001BC	O-Ring	1	1
11	121-012	Bonnet	1	1
12	128-050	Handle	1	1
13	153-163	Insert	1	1
14	160-225	Screw	1	1
15*	S45-125	Tube (Lubricant)		

NOTE: Does not include casting.
* Does not include recommended lubricant (Item 15). Order lubricant separately; apply lubricant to O-Rings.

Equa-Flo Shower Valve, Version Prior to March, 2002 (Figure 10)

For Individual, Econo-Walls, Wall Savers, Panelons and Column Showers

NOTE: Should the rotor come off the stem, align groove in outer rim of rotor with groove in spline on the stem when reassemblin g. Also, if you should wish to reverse hot for cold and cold for hot due to inst all error, or back to back inst allation, you can reassemble rot or 180° against stem and valve will work properly.

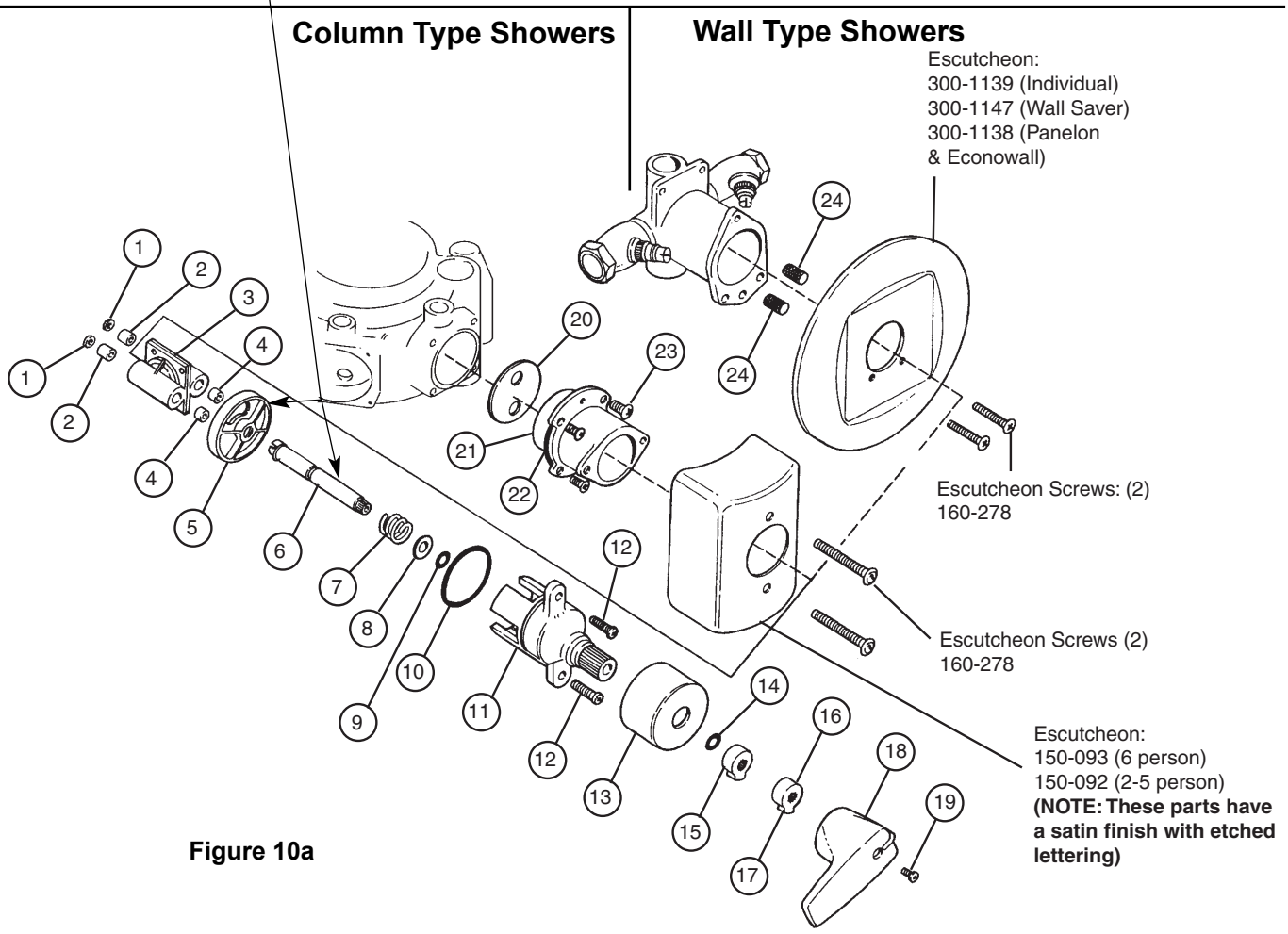


Figure 10a

Valves are equipped with a temperature limit stop which can be used to limit the temperature of tempered water discharged. To adjust the temperature, remove the handle and loosen the set screw. Remove the limit stop and reposition to desired setting. Turn the limit stop clockwise for a hotter setting and counterclockwise for a cooler setting.

NOTE: When replacing the double face seals, lubricate the top face with a small amount of lubricant reassembling.

When assembling cap into valve body, use lubricant on 269-031 O-ring to prevent twisting of O-ring.

If lubricant is not available, a slight film of soap may be used.

to March, 2002

NOTE: This page is for Equa-Flo Shower Valve PRIOR

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Equa-Flo Shower Valve Parts List, Version Prior to March, 2002 (Figure 10)

Item	Part No.	Description	Assembly	Cartridge S Assembly S67-359	tem Assembly S21-065	Gasket Repair Kit S65-073
			Qty			
1	125-055	Square Ring (In Rear)		2		2
2	S55-009	Sleeve & Flapper (Ear must fit into groove)		2		
3	118-145	Cartridge Housing		1		
4	125-081	Double-face Seal		2		2
5	120-042	Rotor	1			
6	120-133	Stem			1	
7	135-018	Spring			1	
8	125-053	Washer				
9	125-001BH	O-Ring			1	1
10	269-031	O-Ring				
11	107-280	Cap/Clamp	1			
12	160-142	Screws	2			
13	107-279	Cover	1			
14	125-001CY	O-Ring	1			1
15	144-041	OFF Stop	1			
16	144-033	Hot Limit Stop	1			
17	160-252	Set Screw	1			
18	128-047	Handle	1			
19	160-214	Screw	1			
20	125-001BS	Gasket	1			
21	118-143	Valve Body	1			
22	169-269	Top Seat Gasket	1			
23	169-256	Screws	4			
24	173-015	Screens (Internal)	2			
25	S27-102	Stops (Optional)	2			

Complete Column Valve Replacement for columns built <u>prior</u> to March, 2002:

S65-075 for 2-5 Person
S65-076 for 6-person

NOTE: This page is for Equa-Flo Shower Valve <u>PRIOR</u> to March, 2002

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Equa-Flo Shower Valve, March, 2002 to July, 2004 (Figure 10)

For Individual, Econo-Walls, Wall Savers, Panelons and Column Showers

NOTE: Should the rotor come off the stem, align groove in outer rim of rotor with groove in spline on the stem when reassemblin g. Also, if you should wish to reverse hot for cold and cold for hot due to inst all error, or back to back inst allation, you can reassemble rot or 180° against stem and valve will work properly.

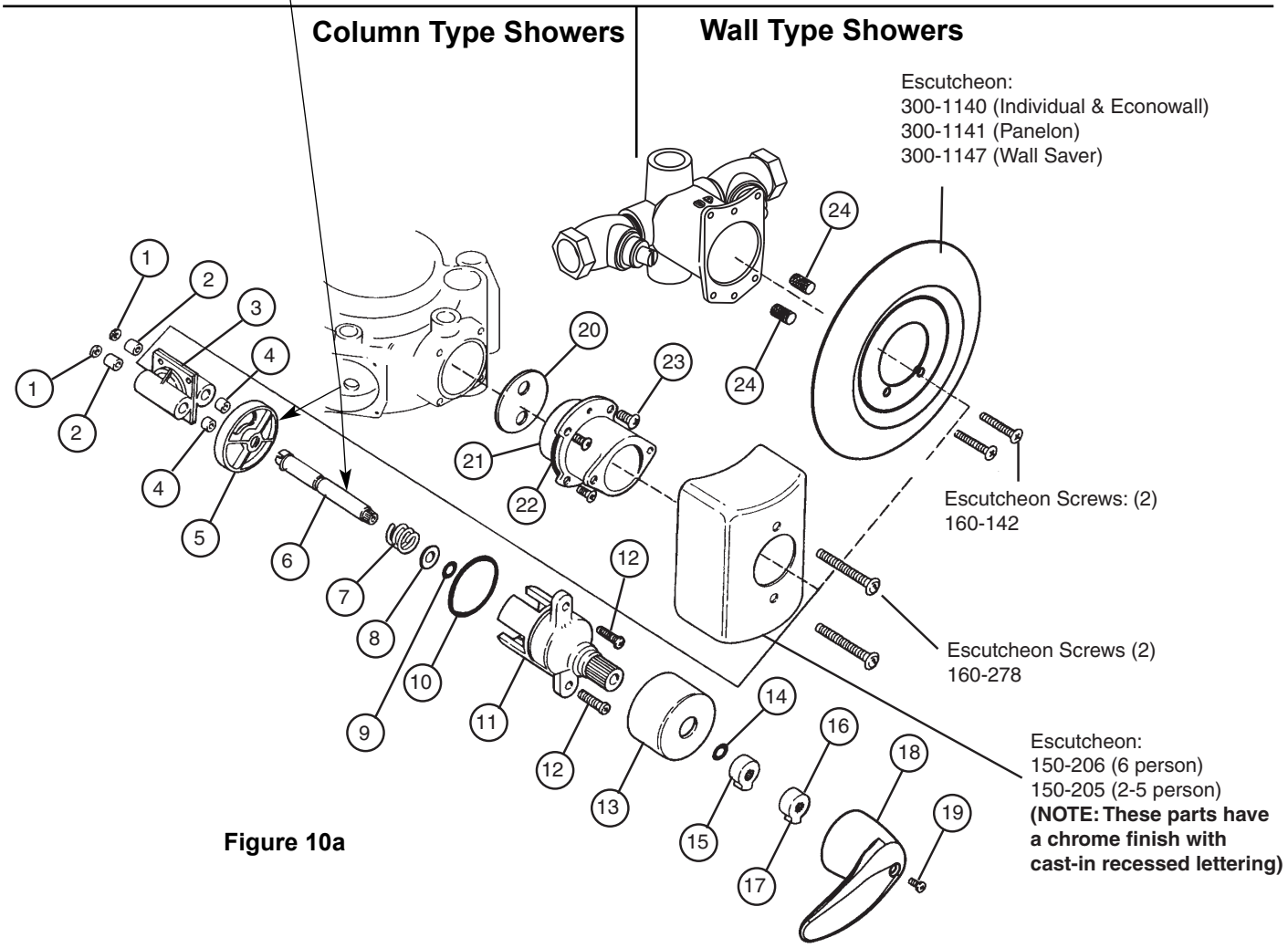

Figure 10a

Valves are equipped with a temperature limit stop which can be used to limit the temperature of tempered water discharged. To adjust the temperature, remove the handle and loosen the set screw. Remove the limit stop and reposition to desired setting. Turn the limit stop clockwise for a hotter setting and counterclockwise for a cooler setting.

NOTE: When replacing the double face seals, lubricate the top face with a small amount of lubricant reassembling.

When assembling cap into valve body, use lubricant on 269-031 O-ring to prevent twisting of O-ring.

If lubricant is not available, a slight film of soap may be used.

NOTE: This page is for Equa-Flo Shower Valve March, 2002 to July, 2004

Equa-Flo Shower Valve Parts List, March, 2002 to July, 2004 (Figure 10)

Item	Part No.	Description	Assembly	Cartridge S Assembly S67-359	tem Assembly S21-065	Gasket Repair Kit S65-073
			Qty			
1	125-055	Square Ring (In Rear)		2		2
2	S55-009	Sleeve & Flapper (Ear must fit into groove)		2		
3	118-145	Cartridge Housing		1		
4	125-081	Double-face Seal		2		2
5	120-042	Rotor	1			
6	120-133	Stem			1	
7	135-018	Spring			1	
8	125-053	Washer				
9	125-001BH	O-Ring			1	1
10	269-031	O-Ring				
11	107-280	Cap/Clamp	1			
12	160-142	Screws	2			
13	107-279	Cover	1			
14	125-001CY	O-Ring	1			1
15	144-041	OFF Stop	1			
16	144-033	Hot Limit Stop	1			
17	160-252	Set Screw	1			
18	128-161	Handle	1			
19	160-214	Screw	1			
20	125-001BS	Gasket	1			
21	118-143	Valve Body	1			
22	169-269	Top Seat Gasket	1			
23	169-256	Screws	4			
24	173-015	Screens (Internal)	2			
25	S27-102	Stops (Optional)	2			

Complete Column Valve Replacement for columns built March, 2002 to July, 2004:

S65-235 for 2-5 Person
S65-236 for 6-person

NOTE: This page is for Equa-Flo Shower Valve March, 2002 to July, 2004

Adjusting the Equa-Flo™ Valve (Figure 10)

NOTE: The maximum temperature limit stop has been preset by the factory for maximum temperature operation. For temperatures other than the maximum, the stop may be repositioned as shown below.

IMPORTANT: Failure to adjust the maximum temperature limit stop to a safe shower temperature, no more than 105°F, could result in the user being scalded.

1. Loosen the setscrew in the bottom of the hot limit stop.
2. Remove the outermost stop and reposition to the desired temperature setting (see Figure 10b).

NOTE: *Do not remove the inner off-stop.*

A. Position the Temperature Limit Stops as shown for Individual Wall Showers.

B. Position the Temperature Limit Stops as shown for Wall-Savers, Panelons and Econo-Walls.

C. Position the Temperature Limit Stops as shown for Column Showers.

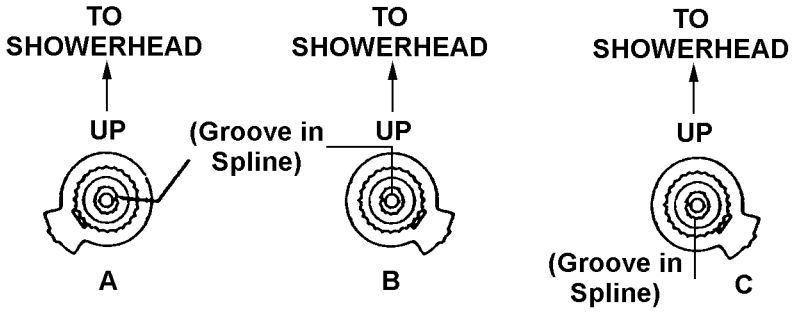

Figure 10b

3. If the desired position falls between adjacent positions on the spline, flip the stop over so that the other face shows. This shifts the stop position by 1/2 spline.

FOR BACK-TO-BACK INSTALLATION: On the valve that is installed "backwards," rotate the stem 180° so that the "groove in spline" is opposite that shown for tub and shower valves (see Figure 10c).

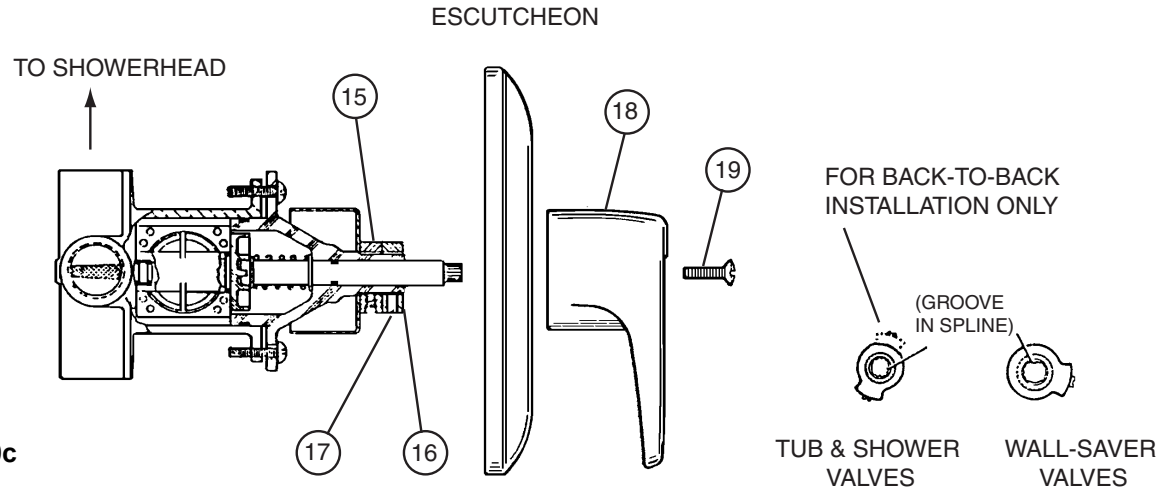

Figure 10c

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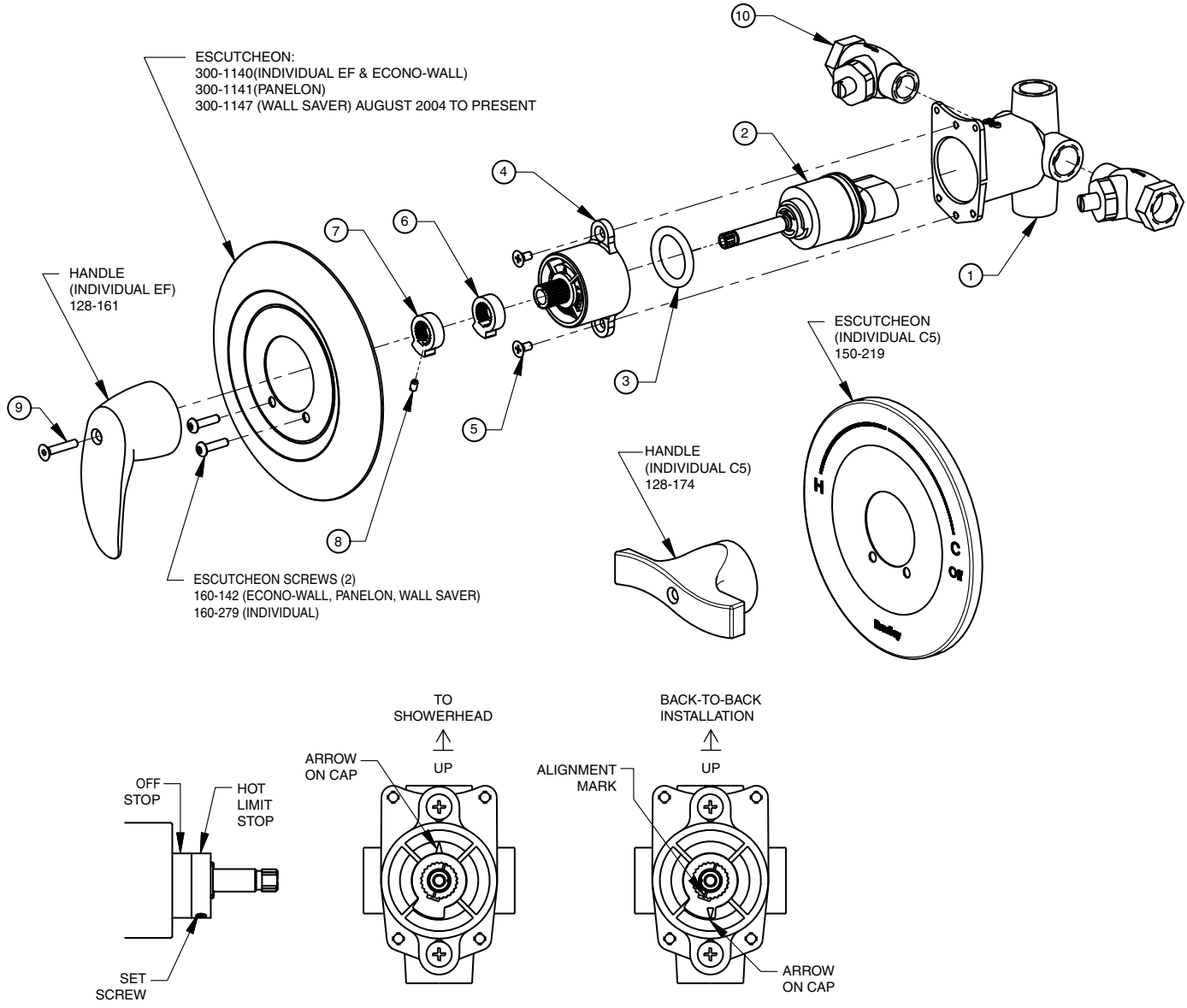
Equa-Flo Pressure Balancing Valve, August 2004 to Present

For Individual, Econo-Walls, Wall Savers and Panelons Showers



Equa-Flo valves are equipped with a temperature limit stop which can be used to limit the temperature of tempered water dischar ged.

IMPORTANT: **The hot limit stop as shown above has been set for maximum temperature operation. For temperatures other than the maximum, the stop may be repositioned as described below . Failure to adjust the hot limit stop to a safe shower temperature could result in the user being scalded.**

To adjust the temperature, remove the handle and loosen the set screw . Remove the HOT limit stop and reposition to desired sett ing. Turn the limit stop clockwise for a HOTTER setting and counterclockwise for a COOLER setting.

When assembling the cartridge assembly into the valve body and cap, lubricate the stem and O-rings with S45-125 grease.

If the desired position falls between adjacent positions on the spline, flip the HOT limit stop over so the other face shows. This shifts the stop position by 1/2 spline.

FOR BACK-TO-BACK INSTALLATION: On the valve that is inst alled “backwards”.

A. Remove (2) screws that hold down cap.
B. Rotate cap and cartridge assembly 180°; re-inst all screws.
C. Remove both limit stops and rotate 180°. Align with Alignment Mark as shown.
D. Adjust hot limit stop the same as for a st andard installation.

Equa-Flo Pressure Balancing Valve Parts List (August, 2004 to Present) Individual, Econo-Walls, Wall Savers and Panelons

Item	Part No.	Description	Assembly	Gasket Repair Kit S65-276	Cartridge Assy. Repair Kit S65-277
			Qty		
1	118-144	Valve Body	1	—	—
2	269-1785	Cartridge Assembly	1 (See Note 4)	—	1 (See Note 4)
3	125-161	O-Ring	—	1 (See Note 3)	1 (See Note 4)
4	107-551	Cap	1	—	—
5	160-454	Screw 10-24 x 3/8 Flat Head	2	—	—
6	144-041	Limit Stop, OFF	1	—	—
7	144-033	Limit Stop, HOT	1	—	—
8	160-252	Set Screw 8-32 x 1/4	1	—	—
9	160-214	Screw 10-24 x 1 Flat Head	1	—	—
10	S27-102	Check Stop	2	—	—

Notes:

1. ***Complete Valve Replacement/Retrofit Kit:***
   S65-265 Individual and Econo-Wall Showers
   S65-265A Panelon
   S65-265B Wall Saver

   Kit part numbers contain all parts necessary to replace/retrofit one station only . Customer must order proper amount of kits; example: Three S65-265 kits required for a 3W Econo-W all Shower.
2. ***Part numbers on this page apply only to Equa-Flo valves built from1983 to Present; Equa-Flo valves built prior to 1983 must use S65-092 Retrofit Kit.***
3. ***Gasket Repair kit also contains the three external O-rings (not shown on exploded diagram) supplied with the 269-1785 cartridge assembly.***
4. ***If the 269-1785 Cartridge is disassembled, it cannot be reassembled and must be replaced. The 269-1785 Cartridge assembly cannot be ordered separately; cartridge assembly must be ordered as part of the Repair Kit that includes the O-ring.***

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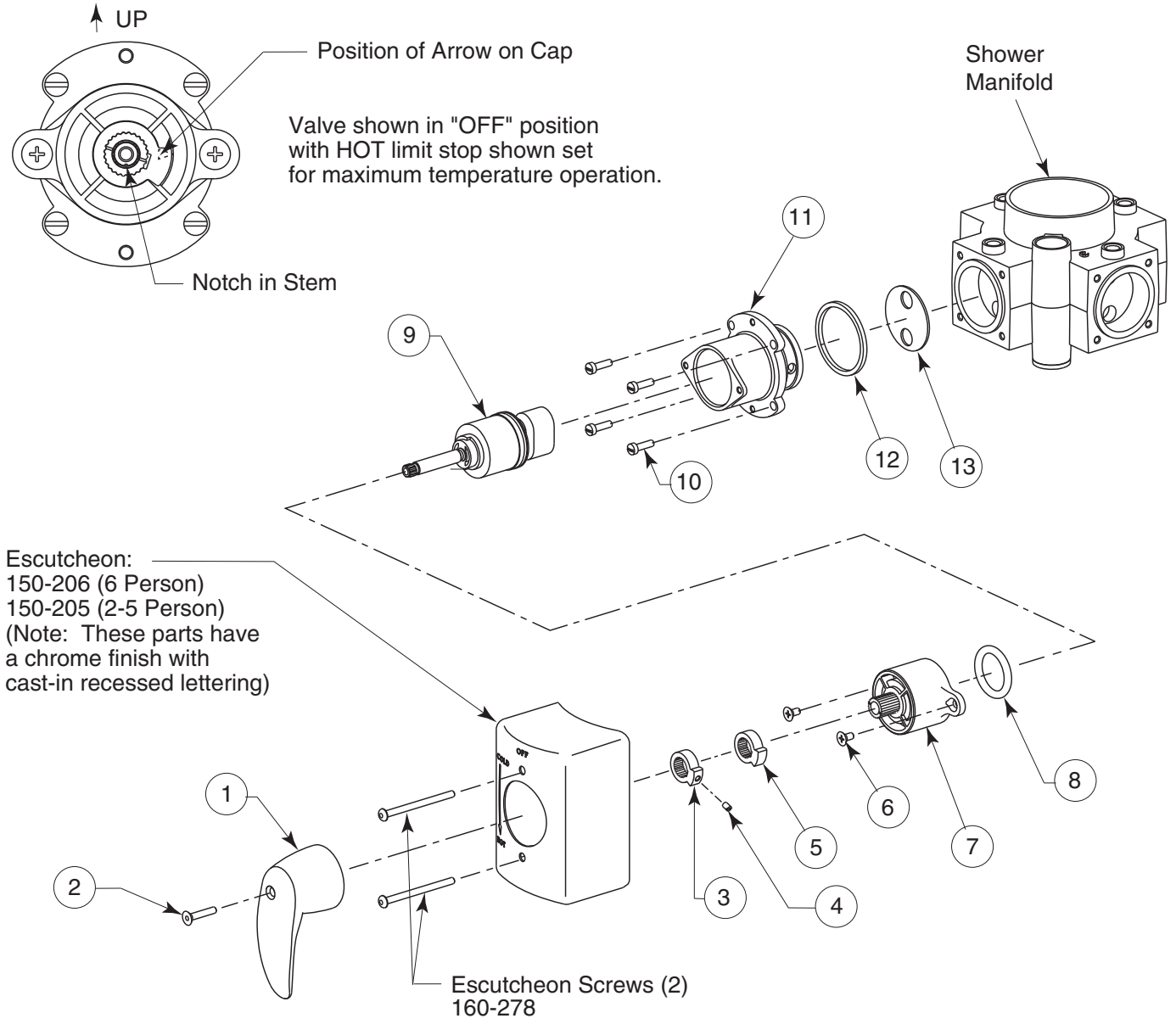
Equa-Flo Pressure Balancing Valve (August, 2004 to Present)

For Column Showers



Equa-Flo valves are equipped with a temperature limit stop which can be used to limit the temperature of tempered water dischar ged.

IMPORTANT: **The hot limit stop as shown above has been set for maximum temperature operation. For temperatures other than the maximum, the stop may be repositioned as described below . Failure to adjust the hot limit stop to a safe shower temperature could result in the user being scalded.**

To adjust the temperature, remove the handle and loosen the set screw . Remove the HOT limit stop and reposition to desired sett ing. Turn the limit stop clockwise for a HOTTER setting and counterclockwise for a COOLER setting.

When assembling the cartridge assembly into the valve body and cap, lubricate the stem and O-rings with S45-125 grease.

If the desired position falls between adjacent positions on the spline, flip the HOT limit stop over so the other face shows. This shifts the stop position by 1/2 spline.

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Equa-Flo Pressure Balancing Valve Parts List (August, 2004 to Present) Column Showers

Item	Part No.	Description	Assembly	Gasket Repair Kit S65-278	Cartridge Assy. Repair Kit S65-277
			Qty		
1	128-161	Handle	1	—	—
2	160-214	Screw #10-24 x 1 Flat Head	1	—	—
3	144-033	Limit Stop, HOT	1	—	—
4	160-252	Set Screw #8-32 x 1/4	1	—	—
5	144-041	OFF Stop	1	—	—
6	160-454	Screw #10-24 x 3/8 Flat Head	2	—	—
7	107-551	Cap	1	—	—
8	125-161	O-Ring	1	1 (See Note 2)	1 (See Note 3)
9	269-1785	Cartridge Assembly	1	—	1 (See Note 3)
10	169-256	Screw #10-24 x 5/8	4	—	—
11	118-143	Valve Body	1	—	—
12	169-269	Gasket	1	1 (See Note 2)	—
13	125-001BS	Washer	1	1 (See Note 2	—

Notes:

1. ***Complete Column Valve Replacement/Retrofit Kit:***
   S65-266 for 2-5 Person
   S65-267 for 6 Person

   Kit part numbers contain all parts necessary to replace/retrofit one station only . Customer must order proper amount of kits; example: Five S65-266 kits required for a 5 Person Column Shower .

2. ***Gasket Repair kit also contains the three external O-rings (not shown on exploded diagram) supplied with the 269-1785 cartridge assembly .***

3. ***269-1785 Cartridge assembly cannot be ordered separately; cartridge assembly must be ordered as part of the Repair Kit that includes the O-ring.***

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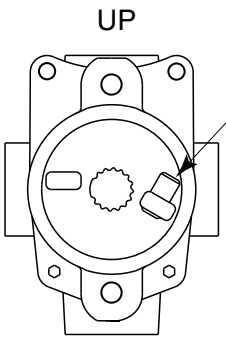
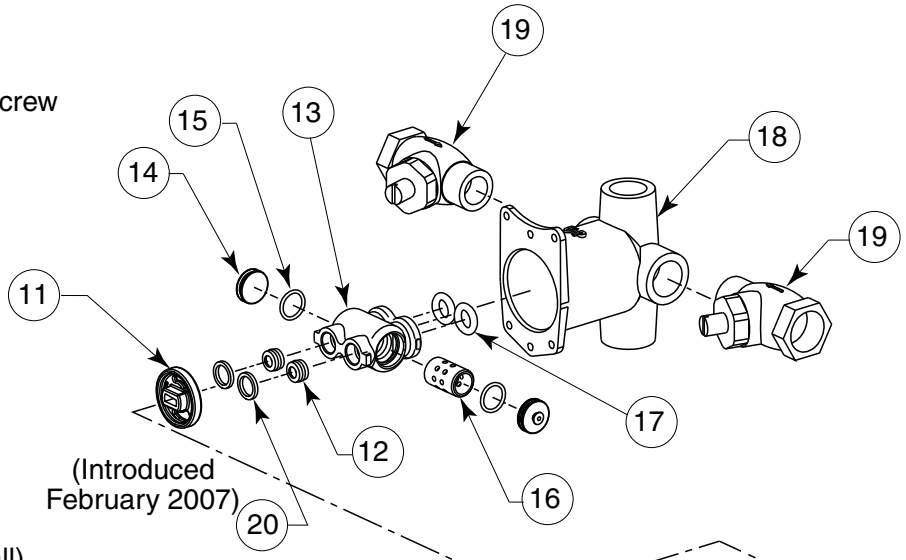
Equa-Flo HD Pressure Balancing Valve

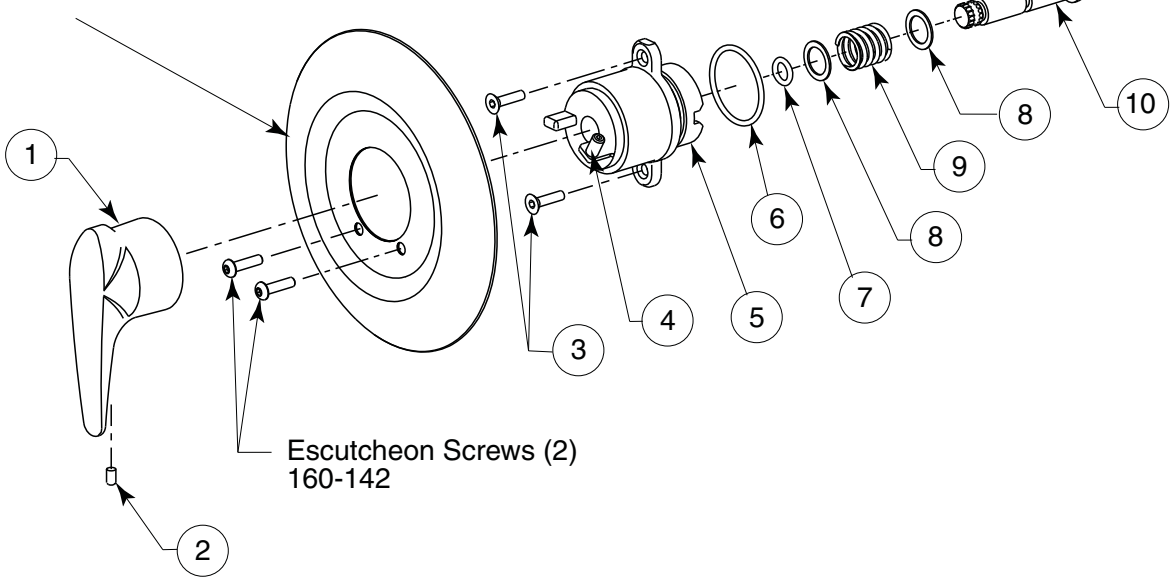
For Individual, Econo-Walls, Wall Savers and Panelons Showers (2003 to Present)



Align Item 5, Valve Cap to Item 18, Valve Body as shown



Escutcheon:
300-1140 (Individual & Econowall)
300-1141 (Panelon)
300-1147 (Wall Saver) August 2004 to Present



Valves are equipped with a temperature limit stop which can be used to limit the temperature of tempered water discharged. To adjust the temperature, remove the handle and adjust the set screw on the valve cap. Turn the set screw clockwise for COLDER setting and counterclockwise for WARMER setting.

NOTE: When replacing the double face seals, lubricate the top face with a small amount of lubricant when reassembling.

When assembling the valve cap into valve body, use lubricant on 125-154 O-ring to prevent twisting of O-ring.

If lubricant is not available, a slight film of soap may be used.

Equa-Flo HD Pressure Balancing Valve Parts List
Individual, Econo-Walls, Wall Savers and Panelons (2003 to Present)

Item	Part No.	Description	Assembly	Cartridge S Assembly S67-602S	tem Assembly S21-076	Gasket Repair Kit S65-248
			Qty			
1	128-163	Handle	1	—	—	—
2	160-226	Screw	1	—	—	—
3	160-225	Screw	2	—	—	—
4	160-441	Set Screw	1	—	—	—
5	107-521	Valve Cap	1	—	—	—
6	125-154	O-Ring	1	—	—	1
7	125-001AY	O-Ring	—	—	1	1
8	142-131	Washer	—	—	2	—
9	135-089	Spring	—	—	1	—
10	120-150	Stem	—	—	1	—
11	120-155A	Rotor	1	—	—	—
12	125-081	Double-Face Seal	—	2	—	2
13	118-311	Cartridge Housing	—	1	—	—
14	153-428	Retainer	—	2	—	—
15	125-001BQ	O-Ring	—	2	—	2
16	119-242	Piston	—	1	—	—
17	125-155	O-Ring	—	2	—	2
18	118-144	Valve Body	1	—	—	—
19	S27-102	Stops (Optional)	2	—	—	—
20	142-130	Washer	—	2	—	2

Complete Valve Replacement/Retrofit Kit:
S65-249 Individual and Econowall Showers
S65-249A Panelon
S65-249B Wall Saver

NOTE: Above part numbers contain all parts necessary to replace/retrofit one station only. Customer must order proper amount of kits; example: Three S65-249 kits required for a 3W Econo-W all Shower.

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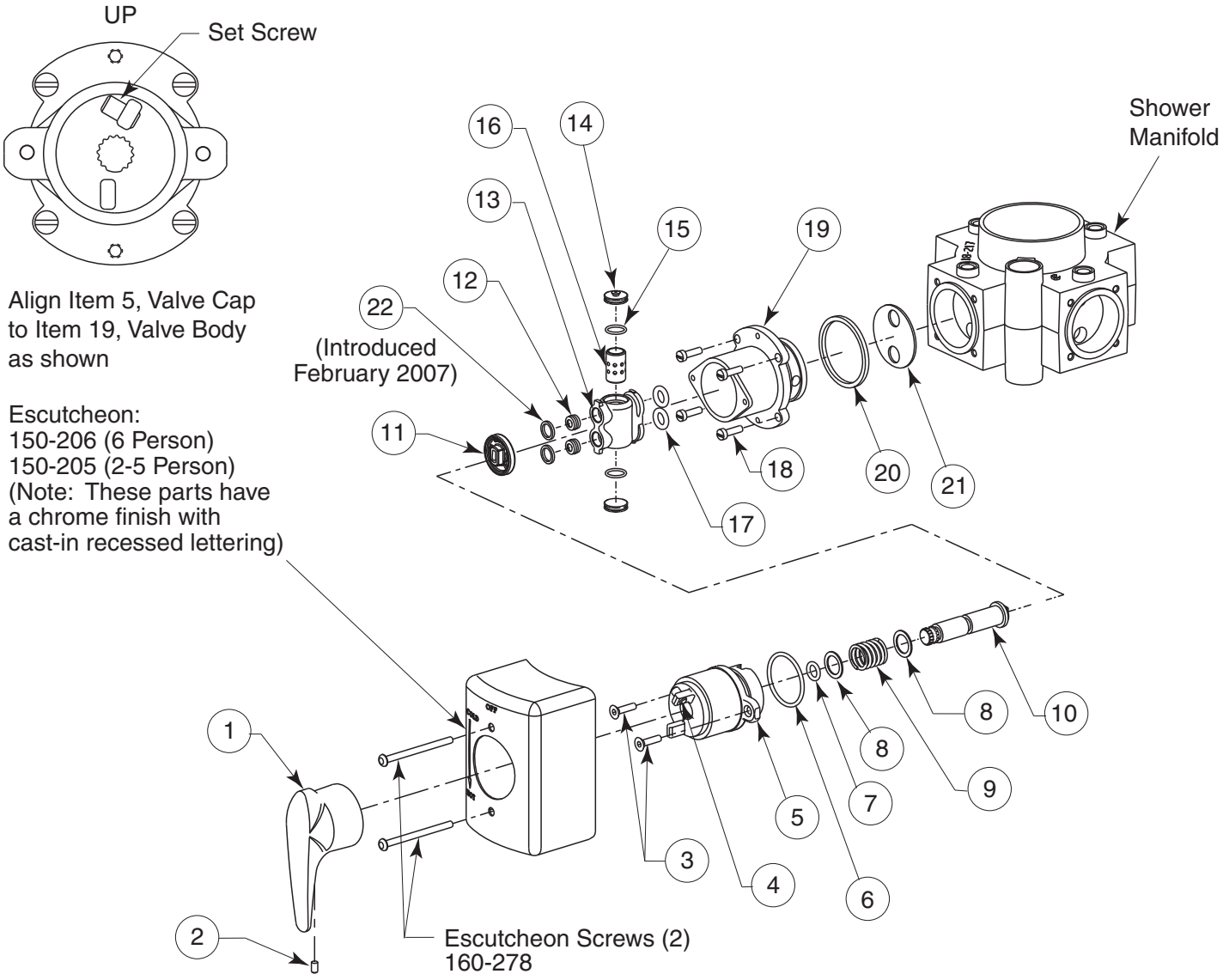
Equa-Flo HD Pressure Balancing Valve

For Column Showers (2003 to Present)



Valves are equipped with a temperature limit stop which can be used to limit the temperature of tempered water discharged. To adjust the temperature, remove the handle and adjust the set screw on the valve cap. Turn the set screw clockwise for COLDER setting and counterclockwise for WARMER setting.

NOTE: When replacing the double face seals, lubricate the top face with a small amount of lubricant when reassembling.

When assembling the valve cap into valve body, use lubricant on 125-154 O-ring to prevent twisting of O-ring.

If lubricant is not available, a slight film of soap may be used.

Equa-Flo HD Pressure Balancing Valve Parts List Column Showers (2003 to Present)

Parts List

Item	Part No.	Description	Assembly	Cartridge S Assembly S67-602S	tem Assembly S21-076	Gasket Repair Kit S65-248A
			Qty			
1	128-163	Handle	1	—	—	—
2	160-226	Screw	1	—	—	—
3	160-225	Screw	2	—	—	—
4	160-441	Set Screw	1	—	—	—
5	107-521	Valve Cap	1	—	—	—
6	125-154	O-Ring	1	—	—	1
7	125-001AY	O-Ring	—	—	1	1
8	142-131	Washer	—	—	2	—
9	135-089	Spring	—	—	1	—
10	120-150	Stem	—	—	1	—
11	120-155B	Rotor	1	—	—	—
12	125-081	Double-Face Seal	—	2	—	2
13	118-311	Cartridge Housing	—	1	—	—
14	153-428	Retainer	—	2	—	—
15	125-001BQ	O-Ring	—	2	—	2
16	119-242	Piston	—	1	—	—
17	125-155	O-Ring	—	2	—	2
18	169-256	Screw	4	—	—	—
19	118-143	Valve Body	1	—	—	—
20	169-269	Gasket	1	—	—	1
21	125-001BS	Washer	1	—	—	1
22	142-130	Washer	—	2	—	2

Complete Column Valve Replacement/Retrofit Kits for columns:

S65-250 for 2-5 Person
S65-251 for 6-person

NOTE: Above part numbers contain all parts necessary to replace/retrofit one station only. Customer must order proper amount of kits; example: Five S65-250 kits required for a five person column.

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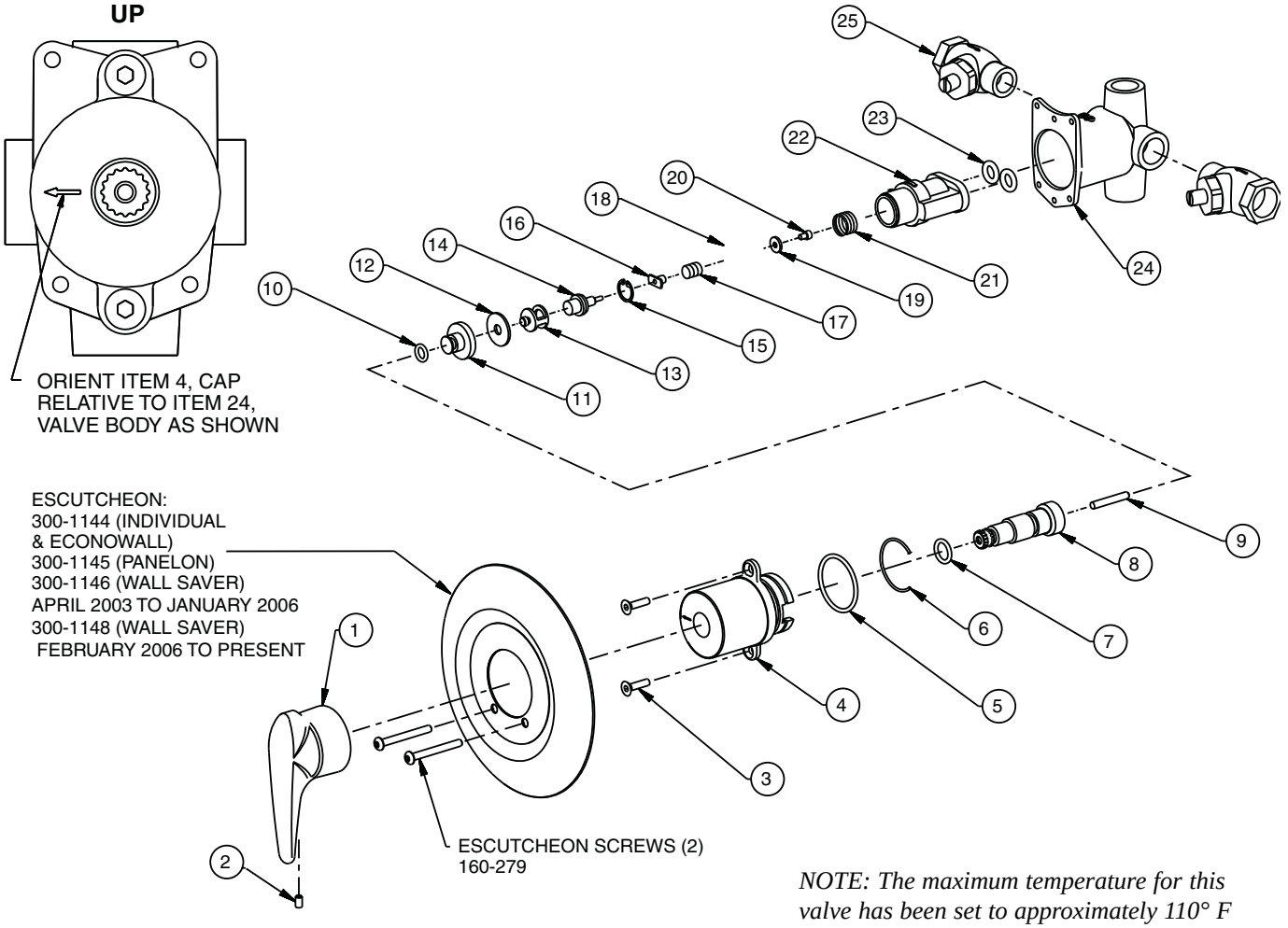
Operation and Service Instructions **Bradley Showers**

Thermostatic Mixing Valve – Model S59-2005 (April, 2003 to Present)

For Individual, Econo-Wall, Wall Saver and Panelon Showers



NOTE: The maximum temperature for this valve has been set to approximately 110° F with an incoming hot water temperature of 140° F. This maximum temperature may need to be adjusted based on the installation conditions or application. See Figure below for adjustment.

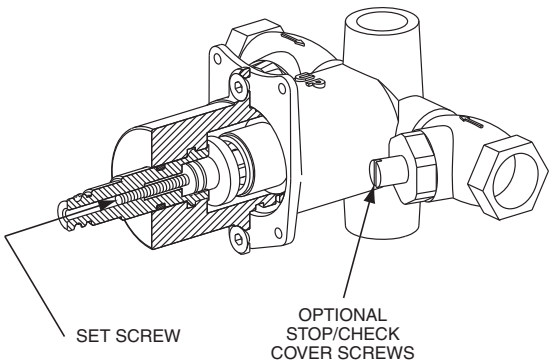
To adjust the valve's temperature to other than the factory preset, follow the procedures outlined below.

1. Turn on the water and let it run until 2.5 – 4 GPM is flowing through the valve.
2. Remove the shower valve handle and handle screw to expose the set screw inside the valve stem.
3. Using a 3/32" hex-head Allen key, turn the set screw **counterclockwise** to **increase** the temperature or **clockwise** to **decrease** the temperature.
4. When the adjustment is complete, replace the handle and turn of f the water.

NOTE: When replacing the double face seals, lubricate the top face with a small amount of lubricant when reassembling.

When assembling the valve cap into valve body , use lubricant on 125-154 O-ring to prevent twisting of O-ring.

If lubricant is not available, a slight film of soap may be used.



VALVE SHOWN WITH HANDLE AND ESCUTCHEON REMOVED FOR CLARITY

Thermostatic Mixing Valve – Model S59-2005 (April, 2003 to Present)

For Individual, Econo-Wall, Wall Saver and Panelon Showers

Parts List

Item	Part No.	Description	Assy.	Piston Seat Assembly S64-094	Assembly S86-006	Thermostat Kit S65-257	Piston/Liner Kit S65-253	O-Ring/Seat Kit S65-252
				Qty				
1	128-163	Handle	1	—	—	—	—	—
2	160-226	Set Screw 10-24 x 5/16	1	—	—	—	—	—
3	160-225	Flat Screw 10-24 x 3/4	2	—	—	—	—	—
4	107-519	Cap, TMV-Shower	1	—	—	—	—	—
5	125-154	O-Ring	1	—	—	1	—	1
6	153-427	Retainer, Shower TMV	1	—	—	—	—	—
7	125-001CD	O-Ring	1	—	—	—	—	1
8	120-152	Stem, Shower TMV	1	—	—	—	—	—
9	160-408	Set Screw 10-24 x 1-1/4	1	—	—	—	—	—
10	125-001CM	O-Ring	1	—	1	—	—	1
11	153-404	Holder-Shutoff Disk	1	—	1	—	—	1
12	142-112	Disk-Shutoff	1	—	1	—	—	1
13	153-406	Retainer-Shutoff Disk	1	—	1	—	—	1
14	S39-413	Thermostat	1	—	—	1	—	—
15	132-044	Retaining Ring	1	1	—	—	1	—
16	153-405	Retainer-Overheat Spring	1	1	—	—	1	—
17	135-085	Spring	1	1	—	—	1	—
18	119-245	Piston	1	1	—	—	1	—
19	142-129	Seal Disk - Hot	1	1	—	—	1	—
20	160-407	Screw 6-32 x 3/16	1	1	—	—	1	—
21	135-074	Spring	1	—	—	—	1	—
22	144-065	Liner, TMV-Shower	1	—	—	—	1	—
23	125-155	O-Ring	2	—	—	—	2	2
24	118-144	Valve Body	1	—	—	—	—	—
25	S27-102	Stops (Optional)	2	—	—	—	—	—

Complete Valve Replacement/Retrofit Kit:
S65-254 Individual and Econowall Showers
S65-254A Panelon
S65-254B Wall Saver

NOTE: Above part numbers contain all parts necessary to replace/retrofit one station only. Customer must order proper amount of kits; example:
Three S65-254 kits required for a 3W Econo-W all Shower.

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Thermostatic Mixing Valve – Model S59-2005 (April, 2003 to Present)

For Individual, Econo-Wall, Wall Saver and Panelon Showers

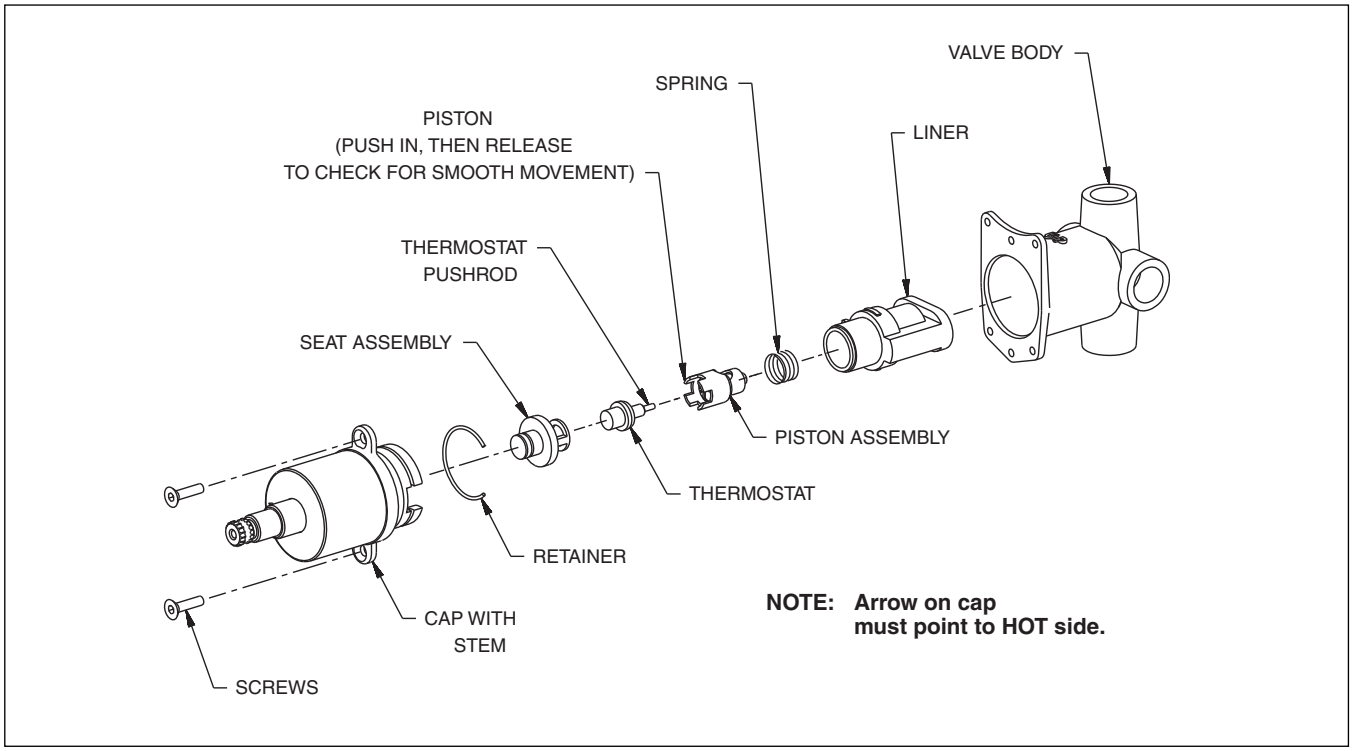
Thermostatic Mixing Valve Maintenance

For maximum efficiency, your thermostatic mixing valve requires a minimum amount of maintenance. Follow the procedures outlined below to achieve highest performance.

Check the piston for smooth movement

To check the valve's piston for free and smooth movement, follow the procedures outlined below:

1. Remove the handle and escutcheon to expose the valve assembly.
2. Loosen the two screws that hold the valve assembly in the valve body.
3. Remove the valve assembly.
4. Gently pry the retainer off the valve assembly. This will separate the cap and liner exposing other components.
5. Disassemble components as shown below.
6. Push in on the piston with your finger (the piston should move freely). If the movement is not as it should be, the piston and liner assembly needs to be cleaned.
   - any cleaner suitable for brass and stainless steel may be used (if cleaning with suitable cleaner is not sufficient to remove debris, a 400-grit sandpaper may be used to polish and hone the piston and liner).
7. Reassemble the valve assembly in reverse manner.
8. If, after a thorough cleaning, the piston does not move freely, the piston/liner assembly must be replaced. Order a new Piston/Liner Assembly as specified in the parts list.



Thermostatic Mixing Valve – Model S59-2005 (April, 2003 to Present)

For Individual, Econo-Wall, Wall Saver and Panelon Showers

Thermostatic Mixing Valve Maintenance *continued . . .*

Check the thermostat for proper operation

To check the valve's thermostat for proper operation, follow the procedure outlined below.

1. At room temperature (80° F or less), remove the valve assembly from the valve body as outlined in the previous section detailing piston movement.
2. Place the thermostat into a small container filled with 115° water. The thermostat's pushrod should pop out of the thermostat approximately 1/10".
3. If the pushrod does not pop out, the thermostat must be replaced (it cannot be repaired). Order a new thermostat kit as specified in the parts list.

Thermostatic Mixing Valve Troubleshooting

NOTE: Before attempting to troubleshoot the valve or disassemble the components, check for the following conditions:

- *if optional stop/check valves are used, make sure that they are fully open and that all inlet and outlet shut-off valves are open.*
- *make sure that the hot and cold inlet pipes are connected properly, and that there are no cross-connections or leaking stop/check valves.*
- *check the hot water heater output to make sure that it is at least 15° F above the set temperature.*

Be sure to close the appropriate shut-off valves prior to disassembly of the valve and reopen the valves after inspection and repair is complete.

Problem: Limited water flow

Cause: The optional stop/check sections of the valve do not move freely.

Solution: Dirt and debris have collected on the stop/check valve seat limiting the movement of the stop/checks. The stop/checks should be disassembled and cleaned. The components may be brushed with a small wire brush to remove debris. If the optional stop/check valves need to be replaced, contact your Bradley representative and ask for Stop/Check Valve (part number S27-102).

Problem: External leaks in the system

Cause: Either the NPT joints or O-rings have been damaged.

Solution: Replace the NPT joints and/or O-rings where necessary. For replacement of the O-rings, order the O-ring/Seat kit as specified in the included parts list.

Problem: Improper water temperature or temperature fluctuation

Cause: Thermostat is slowly failing or not working at all.

Solution: See "Check the thermostat for proper operation" and follow the step-by-step procedure.

Cause: Valve temperature is not properly set.

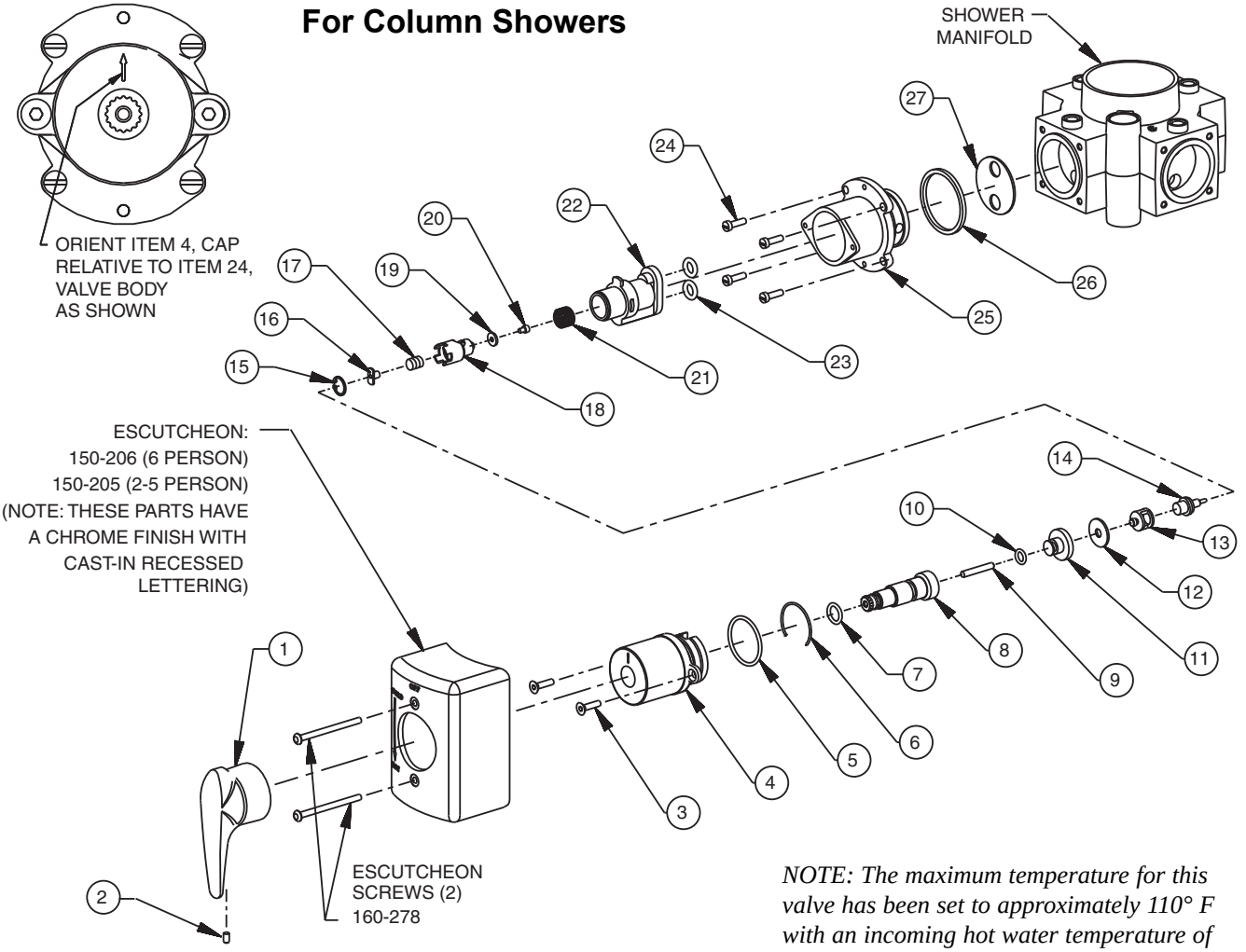
Solution: See "Adjusting the temperature" found on 215-1369-28 (1 of 4) and follow the step-by-step procedure.

Cause: Inlet supply line to the mixing valve is being shared by other pieces of equipment that are used only periodically, such as laundry appliances or washdown stations. It may reduce the inlet pressure to the mixing valve to less than 3 PSI. The supply line size may not be large enough to supply both the valve and the other appliances.

Solution: Enlarge the supply line size, reconfigure the supply line or regulate the supply usage.

Thermostatic Mixing Valve

For Column Showers



NOTE: The maximum temperature for this valve has been set to approximately 110° F with an incoming hot water temperature of 140° F. This maximum temperature may need to be adjusted based on the installation conditions or application. See Figure below for adjustment.

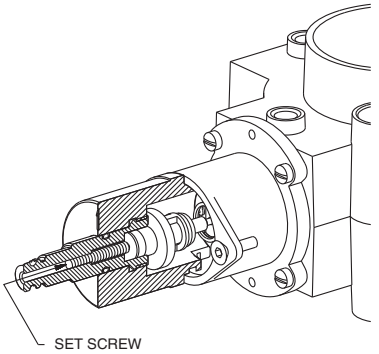
To adjust the valve's temperature to other than the factory preset, follow the procedures outlined below.

1. Turn on the water and let it run until 2.5 – 4 GPM is flowing through the valve.
2. Remove the handle and handle screw to expose the set screw inside the valve stem.
3. Using a 3/32" hex-head Allen key, turn the set screw **counterclockwise** to **increase** the temperature or **clockwise** to **decrease** the temperature.
4. When the adjustment is complete, replace the handle and turn of f the water.

NOTE: When replacing the double face seals, lubricate the top face with a small amount of lubricant when reassembling.

When assembling the valve cap into valve body , use lubricant on 125-154 O-ring to prevent twisting of O-ring.

If lubricant is not available, a slight film of soap may be used.



VALVE SHOWN WITH HANDLE AND ESCUTCHEON REMOVED FOR CLARITY

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Thermostatic Mixing Valve

For Column Showers

Parts List

Item	Part No.	Description	Assy.	Piston Seat Assembly S64-094	Assembly S86-006	Thermostat Kit S65-257	Piston/Liner Kit S65-253	O-Ring/Seat Kit S65-252A
				Qty				
1	128-163	Handle	1	—	—	—	—	—
2	160-226	Set Screw 10-24 x 5/16	1	—	—	—	—	—
3	160-225	Flat Screw 10-24 x 3/4	2	—	—	—	—	—
4	107-519	Cap, TMV-Shower	1	—	—	—	—	—
5	125-154	O-Ring	1	—	—	1	—	1
6	153-427	Retainer, Shower TMV	1	—	—	—	—	—
7	125-001CD	O-Ring	1	—	—	—	—	1
8	120-152	Stem, Shower TMV	1	—	—	—	—	—
9	160-408	Set Screw 10-24 x 1-1/4	1	—	—	—	—	—
10	125-001CM	O-Ring	1	—	1	—	—	1
11	153-404	Holder-Shutoff Disk	1	—	1	—	—	1
12	142-112	Disk-Shutoff	1	—	1	—	—	1
13	153-406	Retainer-Shutoff Disk	1	—	1	—	—	1
14	S39-413	Thermostat	1	—	—	1	—	—
15	132-044	Retaining Ring	1	1	—	—	1	—
16	153-405	Retainer-Overheat Spring	1	1	—	—	1	—
17	135-085	Spring	1	1	—	—	1	—
18	119-245	Piston	1	1	—	—	1	—
19	142-129	Seal Disk - Hot	1	1	—	—	1	—
20	160-407	Screw 6-32 x 3/16	1	1	—	—	1	—
21	135-074	Spring	1	—	—	—	1	—
22	144-065	Liner, TMV-Shower	1	—	—	—	1	—
23	125-155	O-Ring	2	—	—	—	2	—
24	169-256	Screw	4	—	—	—	—	—
25	118-143	Valve Body	1	—	—	—	—	—
26	169-269	Gasket	1	—	—	—	—	1
27	125-001BS	Washer	1	—	—	—	—	1

Complete Valve Replacement/Retrofit Kit for columns:
S65-255 for 2-5 Person
S65-256 for 6-Person

NOTE: Above part numbers contain all parts necessary to replace/retrofit one station only. Customer must order proper amount of kits; example:
Five S65-255 kits required for a five person column.

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Thermostatic Mixing Valve

For Column Showers

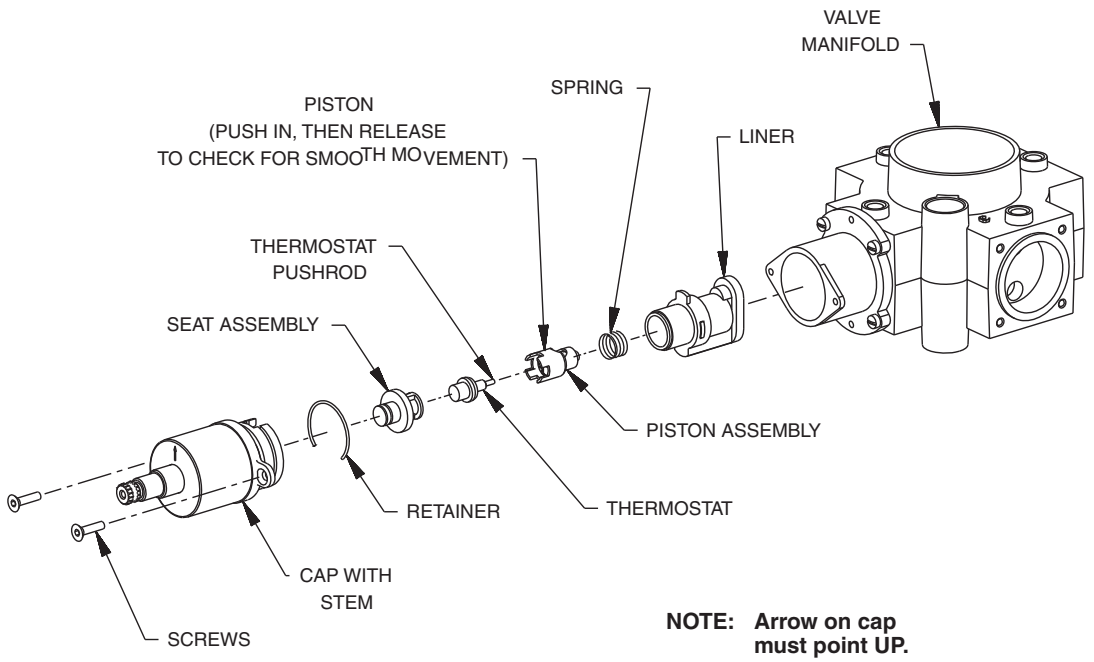
Thermostatic Mixing Valve Maintenance

For maximum efficiency, your thermostatic mixing valve requires a minimum amount of maintenance. Follow the procedures outlined below to achieve highest performance.

Check the piston for smooth movement

To check the valve's piston for free and smooth movement, follow the procedures outlined below:

1. Remove the handle and escutcheon to expose the valve assembly.
2. Loosen the two screws that hold the valve assembly in the valve body.
3. Remove the valve assembly.
4. Gently pry the retainer off the valve assembly. This will separate the cap and liner exposing other components.
5. Disassemble components as shown below.
6. Push in on the piston with your finger (the piston should move freely). If the movement is not as it should be, the piston and liner assembly needs to be cleaned.
   - any cleaner suitable for brass and stainless steel may be used (if cleaning with suitable cleaner is not sufficient to remove debris, a 400-grit sandpaper may be used to polish and hone the piston and liner).
7. Reassemble the valve assembly in reverse manner.
8. If, after a thorough cleaning, the piston does not move freely, the piston/liner assembly must be replaced. Order a new Piston/Liner Assembly as specified in the parts list.



Thermostatic Mixing Valve

For Column Showers

Thermostatic Mixing Valve Maintenance *continued . . .*

Check the thermostat for proper operation

To check the valve's thermostat for proper operation, follow the procedure outlined below.

1. At room temperature (80° F or less), remove the valve assembly from the valve body as outlined in the previous section detailing piston movement.
2. Place the thermostat into a small container filled with 115° water. The thermostat's pushrod should pop out of the thermostat approximately 1/10".
3. If the pushrod does not pop out, the thermostat must be replaced (it cannot be repaired). Order a new thermostat kit as specified in the parts list.

Thermostatic Mixing Valve Troubleshooting

NOTE: Before attempting to troubleshoot the valve or disassemble the components, check for the following conditions:

- *make sure all inlet and outlet shut-off valves are open.*
- *make sure that the hot and cold inlet pipes are connected properly, and that there are no cross-connections or leaking stop valves.*
- *check the hot water heater output to make sure that it is at least 15° F above the set temperature.*

Be sure to close the appropriate shut-off valves prior to disassembly of the valve and reopen the valves after inspection and repair is complete.

Problem: External leaks in the system

Cause: Either the NPT joints or O-rings have been damaged.

Solution: Replace the NPT joints and/or O-rings where necessary. For replacement of the O-rings, order the O-ring/Seat kit as specified in the included parts list.

Problem: Improper water temperature or temperature fluctuation

Cause: Thermostat is slowly failing or not working at all.

Solution: See "Check the thermostat for proper operation" and follow the step-by-step procedure.

Cause: Valve temperature is not properly set.

Solution: See "Adjusting the temperature" found on 215-1369-28A (1 of 4) and follow the step-by-step procedure.

Cause: Inlet supply line to the mixing valve is being shared by other pieces of equipment that are used only periodically, such as laundry appliances or washdown stations. It may reduce the inlet pressure to the mixing valve to less than 3 PSI. The supply line size may not be large enough to supply both the valve and the other appliances.

Solution: Enlarge the supply line size, reconfigure the supply line or regulate the supply usage.

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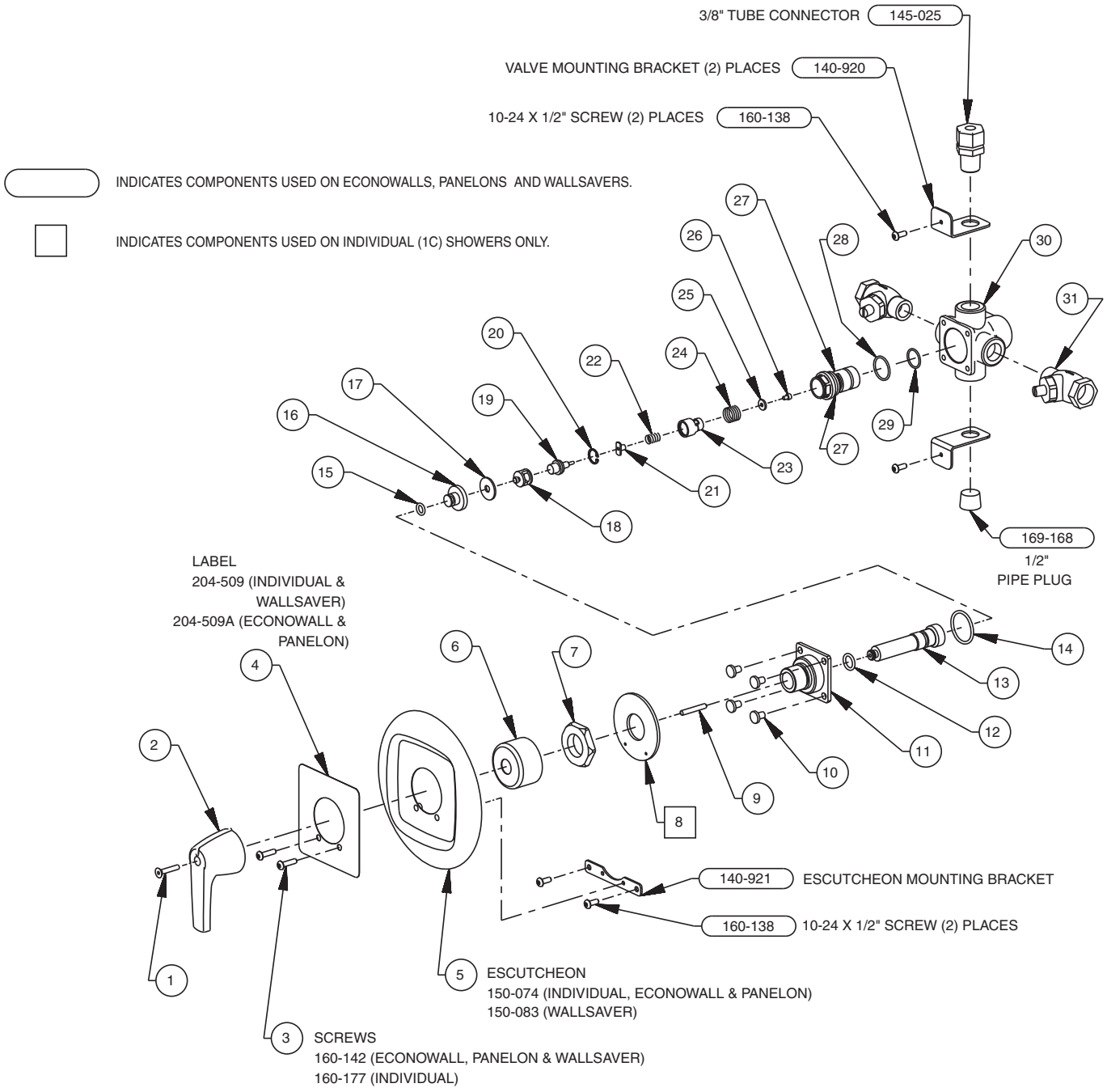
Thermostatic Mixing Valve – Model S59-2006 (2000 to April, 2003)

For Individual, Econo-Wall, Wall Saver and Panelon Showers


3/8" TUBE CONNECTOR 145-025
VALVE MOUNTING BRACKET (2) PLACES 140-920
10-24 X 1/2" SCREW (2) PLACES 160-138
INDICATES COMPONENTS USED ON ECONOWALLS, PANELONS AND WALLSAVERS.
INDICATES COMPONENTS USED ON INDIVIDUAL (1C) SHOWERS ONLY.
169-168
1/2" PIPE PLUG
LABEL
204-509 (INDIVIDUAL & WALLSAVER)
204-509A (ECONOWALL & PANELON)
140-921 ESCUTCHEON MOUNTING BRACKET
160-138 10-24 X 1/2" SCREW (2) PLACES
5 ESCUTCHEON
150-074 (INDIVIDUAL, ECONOWALL & PANELON)
150-083 (WALLSAVER)
3 SCREWS
160-142 (ECONOWALL, PANELON & WALLSAVER)
160-177 (INDIVIDUAL)

To adjust the valve's temperature to other than the factory preset, follow the procedures outlined below.

1. Turn on the water and let it run until 2.5 – 4 GPM is flowing through the valve.
2. Remove the shower valve handle and handle screw to expose the set screw inside the valve stem.
3. Using a 3/32" hex-head Allen key, turn the set screw **counterclockwise** to **increase** the temperature or **clockwise** to **decrease** the temperature.
4. When the adjustment is complete, replace the handle and turn of f the water.

NOTE: The maximum temperature for this valve has been set to approximately 105° F with an incoming hot water temperature of 140° F. This maximum temperature may need to be adjusted based on the installation conditions or application.

Thermostatic Mixing Valve – Model S59-2006 (2000 to April, 2003)

For Individual, Econo-Wall, Wall Saver and Panelon Showers

Parts List

Item	Part No.	Description	Assembly S59-2006	Piston/Liner Kit S65-205	Cover Kit S65-206	Thermostat Kit S65-201	O-Ring/Seal Kit S65-202
			Qty				
1	160-225	Flat Screw 10-24 x 3/4	1	—	—	—	—
2	128-078	Handle	1	—	—	—	—
3	160-177	BTN Screw 10-24 x 1-1/8	2	—	—	—	—
4	204-509	Label	1	—	—	—	—
5	150-074	Escutcheon	1	—	—	—	—
6	107-279	Cover	1	—	—	—	—
7	110-228A	Nut	1	—	1	—	—
8	142-113	Mounting Plate	1	—	1	—	—
9	160-408	Set Screw 10-24 x 1-1/4	1	—	1	—	—
10	160-392	Screw 1/4-20 x 3/8	4	—	1	—	—
11	107-504	Cap	1	—	1	—	—
12	125-001CD	O-Ring	1	—	1	—	1
13	120-148A	Stem, Shower TMV	1	—	1	—	—
14	125-109	O-Ring	1	—	1	—	1
15	125-001CM	O-Ring	1	—	—	1	1
16	153-404	Holder - Shutoff Disk	1	—	—	—	—
17	142-112	Shutoff Disk	1	—	—	—	—
18	153-406	Retainer - Shutoff Disk	1	—	—	—	—
19	S39-413	Thermostat	1	—	—	1	—
20	132-044	Retaining Ring	1	1	—	—	—
21	153-405	Retaining - Overheat Spring	1	1	—	—	—
22	135-085	Spring	1	1	—	—	—
23	119-236	Piston	1	1	—	—	—
24	135-074	Spring	1	1	—	—	—
25	142-129	Seal Disc - Hot	1	1	—	—	1
26	160-407	Screw 6-32 x 3/16	1	1	—	—	—
27	144-059	Liner	1	1	—	—	—
28	125-001DA	O-Ring	1	1	—	—	1
29	125-150	O-Ring	1	1	—	—	1
30	118-287	Valve Body	1	—	—	—	—
31	S27-102	Stops (Optional)	2	—	—	—	—

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Thermostatic Mixing Valve – Model S59-2006 (2000 to April, 2003)

For Individual, Econo-Wall, Wall Saver and Panelon Showers

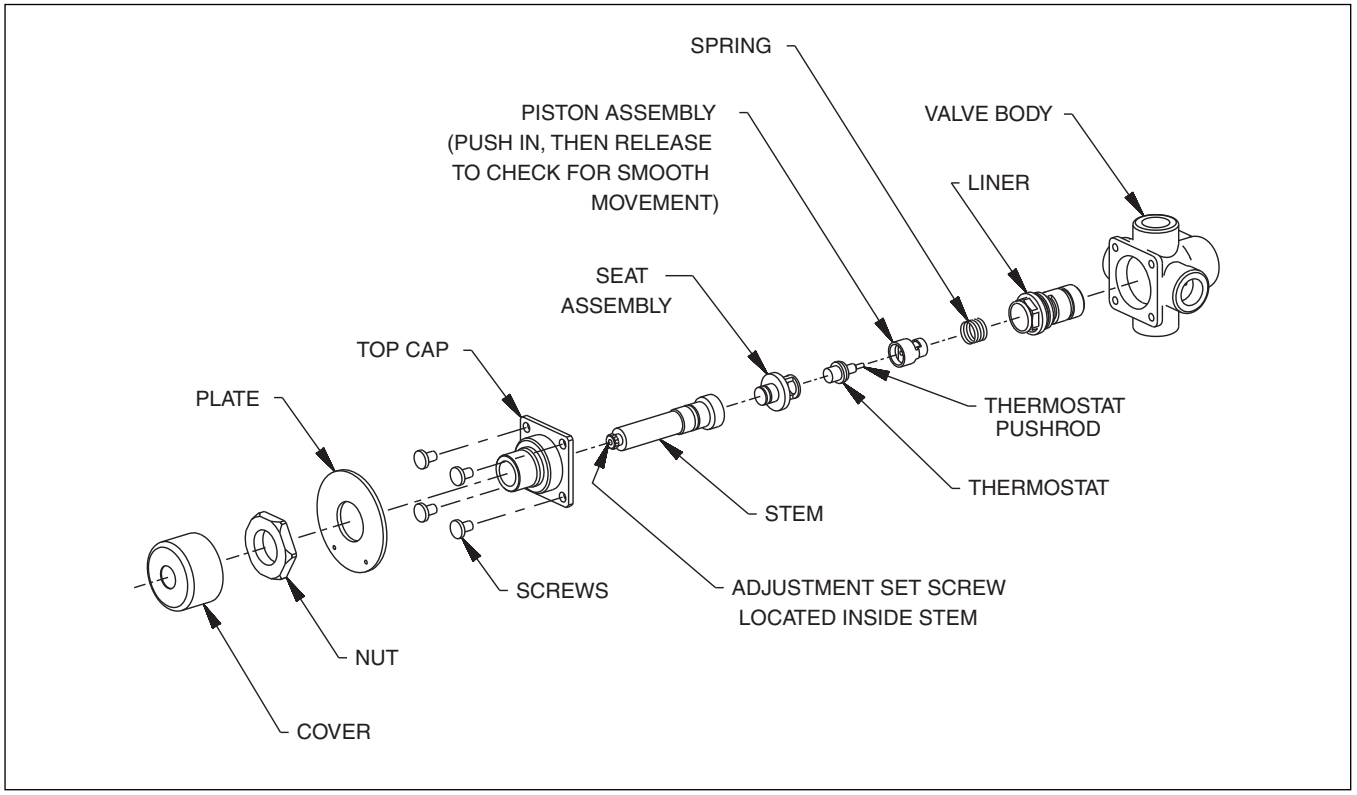
Thermostatic Mixing Valve Maintenance

For maximum efficiency, your thermostatic mixing valve requires a minimum amount of maintenance. Follow the procedures outlined below to achieve highest performance.

Check the piston for smooth movement

To check the valve's piston for free and smooth movement, follow the procedures outlined below:

1. Remove the valve's top cap and thermostat.
2. Push in on the piston with your finger (the piston should move freely). If the movement is not as it should be, the piston and liner assembly needs to be cleaned.
   - remove the cap and thermostat
   - using a 7/8" socket wrench, loosen the piston/liner assembly from the valve body and lift the assembly out with a needle-nose pliers.
   - disassemble the piston/liner assembly components as shown in the figure below.
   - any cleaner suitable for brass and stainless steel may be used (if cleaning with suitable cleaner is not sufficient to remove debris, a 400-grit sandpaper may be used to polish and hone the piston and liner).
   - reassemble the valve assembly in reverse manner and retest the piston.
3. If, after a thorough cleaning, the piston does not move freely, the piston/liner assembly must be replaced. Order a new Piston/Liner Assembly as specified in the parts list.



Thermostatic Mixing Valve – Model S59-2006 (2000 to April, 2003)

For Individual, Econo-Wall, Wall Saver and Panelon Showers

Thermostatic Mixing Valve Maintenance *continued . . .*

Check the thermostat for proper operation

To check the valve's thermostat for proper operation, follow the procedure outlined below.

1. At room temperature (80° F or less), remove the top cap and thermostat as outlined in the previous section detailing piston movement.
2. Place the thermostat into a small container filled with 115° water. The thermostat's pushrod should pop out of the thermostat approximately 1/10".
3. If the pushrod does not pop out, the thermostat must be replaced (it cannot be repaired). Order a new thermostat kit as specified in the parts list.

Thermostatic Mixing Valve Troubleshooting

NOTE: Before attempting to troubleshoot the valve or disassemble the components, check for the following conditions:

- *if optional stop/check valves are used, make sure all inlet and outlet shut-off valves are open (the slotted stem must extend out approximately 1/4" from the valve cap).*
- *make sure that the hot and cold inlet pipes are connected properly, and that there are no cross-connections or leaking stop valves.*
- *check the hot water heater output to make sure that it is at least 15° F above the set temperature.*

Be sure to close the appropriate shut-off valves prior to disassembly of the valve and reopen the valves after inspection and repair is complete.

Problem: Limited water flow

Cause: The optional stop/check sections of the valve do not move freely.

Solution: Dirt and debris have collected on the stop/check valve seat limiting the movement of the stop/checks. The stop/checks should be disassembled and cleaned. The components may be brushed with a small wire brush to remove debris. If the optional stop/check valves need to be replaced, contact your Bradley representative and ask for Stop/Check Valve (part number S27-102).

Problem: External leaks in the system

Cause: Either the NPT joints or O-rings have been damaged.

Solution: Replace the NPT joints and/or O-rings where necessary. For replacement of the O-rings, order the O-ring/Seat kit as specified in the included parts list.

Problem: Improper water temperature or temperature fluctuation

Cause: Thermostat is slowly failing or not working at all.

Solution: See "Check the thermostat for proper operation" and follow the step-by-step procedure on the previous page.

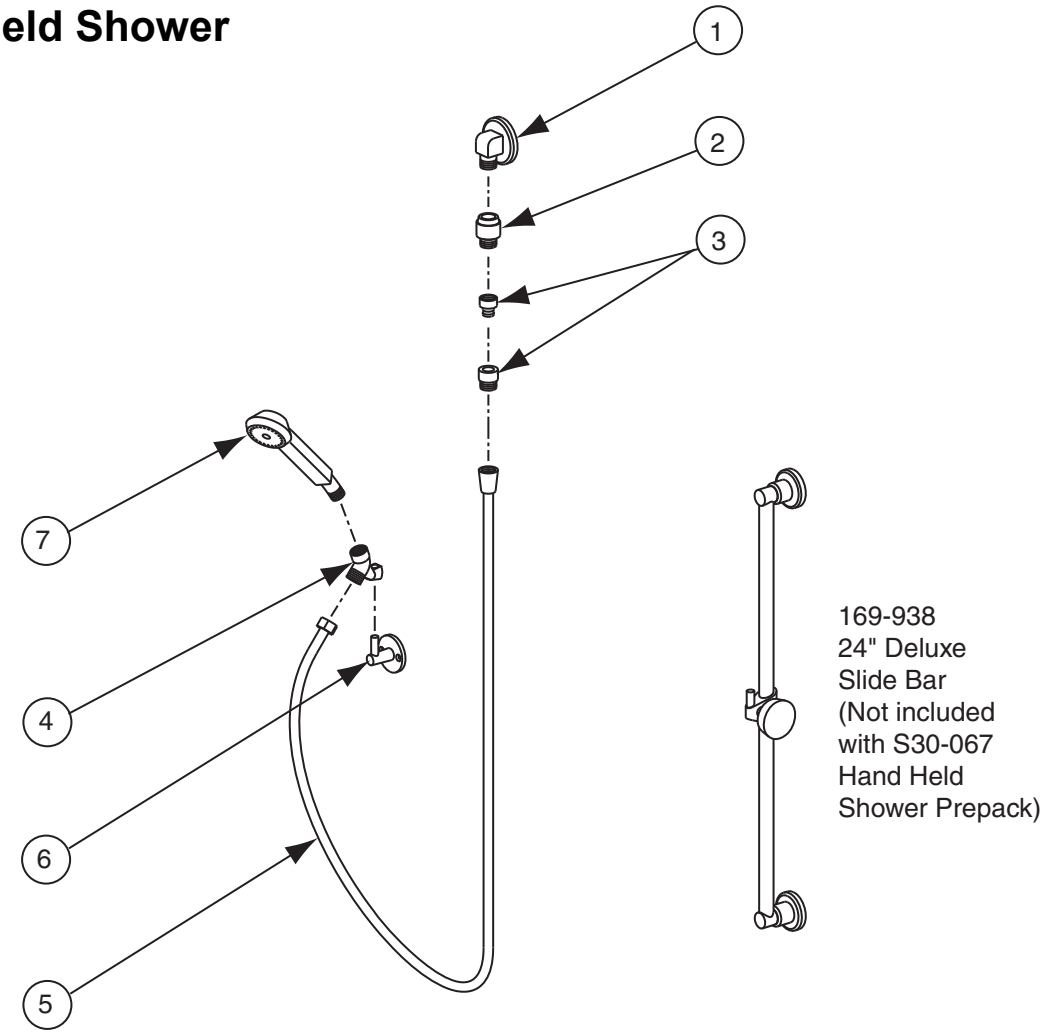
Cause: Valve temperature is not properly set.

Solution: See "Adjusting the temperature" found on 215-1369-28B (1 of 4) and follow the step-by-step procedure.

Cause: Inlet supply line to the mixing valve is being shared by other pieces of equipment that are used only periodically, such as laundry appliances or washdown stations. It may reduce the inlet pressure to the mixing valve to less than 3 PSI. The supply line size may not be large enough to supply both the valve and the other appliances.

Solution: Enlarge the supply line size, reconfigure the supply line or regulate the supply usage.

Hand Held Shower



Parts List

Item	Part No.	Description	Hand Held Shower Prepack S30-067 Qty
1	169-941	Supply Elbow w/Flange - HN	1
2	169-988	Back Flow Preventer	1
3	169-939	Quick Connector	1
4	169-943	Swivel Connector	1
5	169-937	S.S. Flex Hose - 60"	1
6	169-949	Wall Mount - Hand Shower	1
7	169-936	Hand Shower	1

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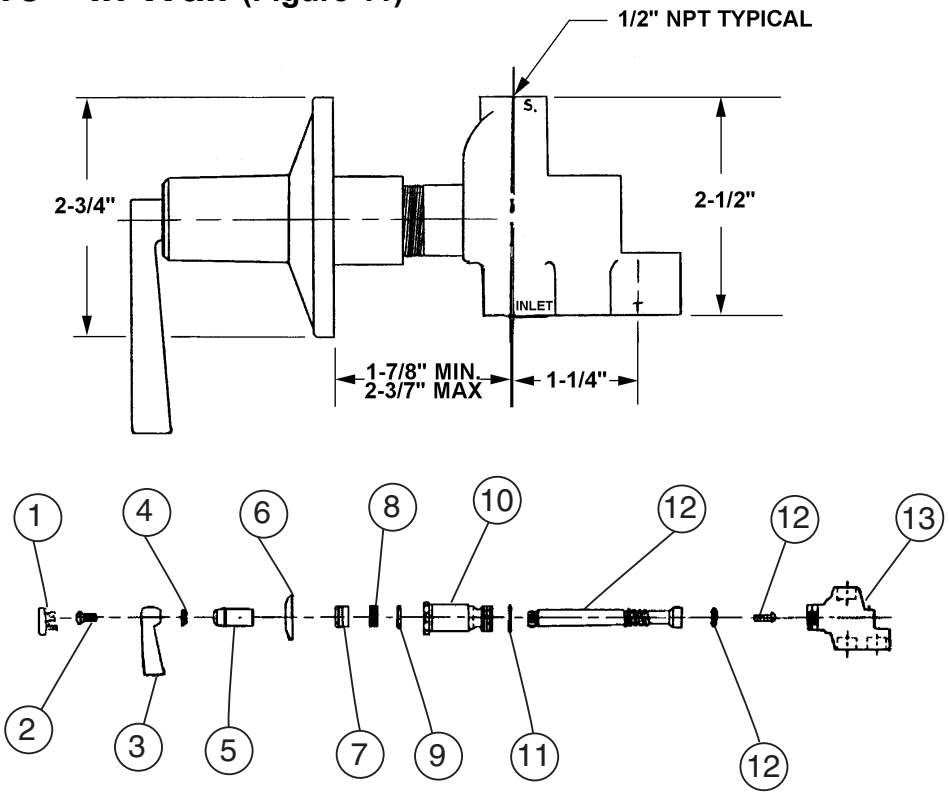
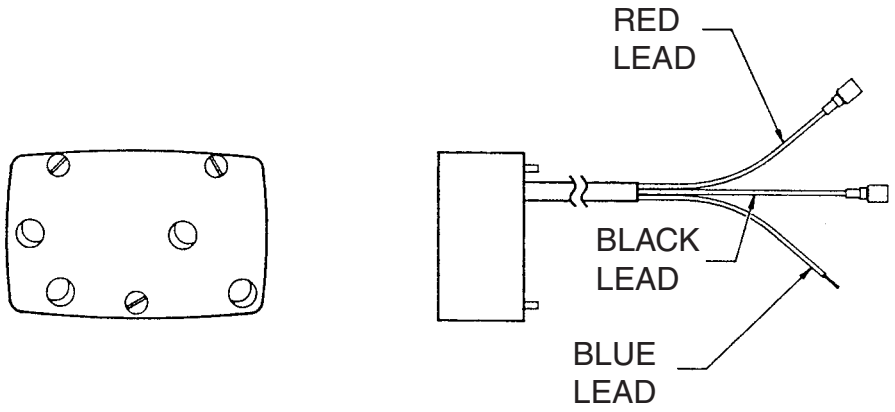
Diverter Valve – In Wall (Figure 11)



Parts List

Item	Part No.	Description	Valve Assembly S27-185 Qty
1	269-1368	Index	1
2	269-413	Screw	1
3	269-412	Handle	1
4	269-411	Spindle Bushing	1
5	269-410	Collar	1
6	269-409	Escutcheon	1
7	269-408	Packing Nut	1
8	269-407	Packing	1
9	269-406	Washer	1
10	269-405	Hub	1
11	125-001DC	O-Ring	1
12	269-415	Repair Kit	1
13	269-403	Body	1

Infrared Sensor (Figure 12)



Infrared Sensor
S83-099

Metering Air Valve (Figure 13)

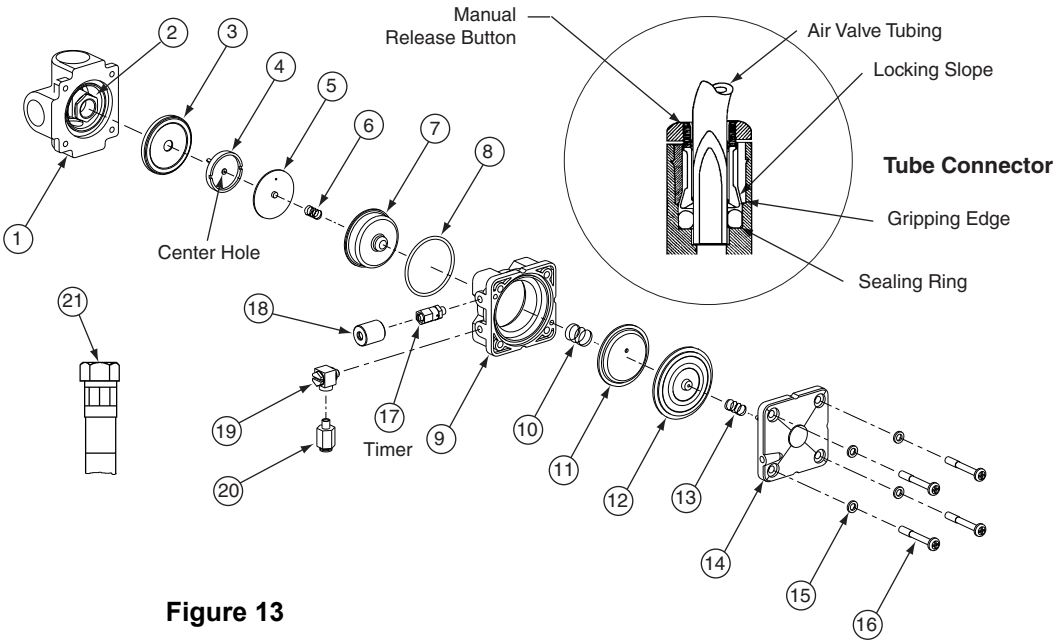


Figure 13

Parts List

Item	Part No.	Description	Assembly	Valve Kit S65-110	Repair Kit S73-054C
			Qty		
1	118-183	Lower Valve Body	1		
2	117-036	Valve Seat	1		
3	269-665	Rubber Diaphragm	1	1	1
4	269-664	Plastic Disk	1	1	1
5	179-082	Stainless Steel Disk	1	1	1
6	135-053	Spring	1	1	1
7	269-662	Divider Plate	1		1
8	125-001DT	O-Ring	1		1
9	118-247	Air Valve Body	1		1
10	135-052	Spring for Magnet	1		1
11	269-660	Magnet Assembly	1		1
12	269-659	Air Diaphragm	1		1
13	135-051	Diaphragm Spring	1		1
14	269-657	Valve Cover	1		1
15	142-002CR	Lockwasher	4		
16	160-313	Screw	4		
17	S27-254	Timer Assembly	1		1
18	269-656	Cover – Timer Assy.	1		1
19	269-1186	Fitting — Adj. "L"	1		
20	169-890	Tube Connector	1		1
21	269-1188	Filter Washer (Inside Flex Hose)	1		
	215-913	Air Valve Instruction Sheet		1	

Metering Air Valve Troubleshooting Instructions (Figure 13)

How They Work

Refer to Figure 13.

1. A pulse of air is created at the air diaphragm by pressing the pushbutton.
2. The pulse of air travels through the 1/8" air tubing into the lower port on the valve, up through the magnet (housed within Item 9) and diaphragm, and exits through the top cover of the valve.
3. Releasing the pushbutton draws all the air out of the valve creating a vacuum inside the valve.
4. The top diaphragm acts as a check and does not let any air enter the valve through the top cover.
5. The vacuum created allows the magnet to drop down in the valve, attracting the armature plate.
6. The rising armature plate allows the water pressure to push the seat diaphragm off the valve seat.
7. Water flows through the seat and out to the sprayhead.
8. Air is pulled into the valve through the timer by the vacuum on the inside of the valve.
9. The incoming air breaks the vacuum on the inside of the valve (Item 9).
10. The amount of air entering the valve through the timer determines the metering cycle.
11. When the vacuum is eliminated, the magnet spring pushes the magnet back to its original position.
12. The armature plate drops down to its original position, pushing the seat diaphragm back down on the seat closing the valve.
13. A small amount of water passes through the diaphragm to equalize the pressure on either side of the diaphragm.

Adjust Air Valve Meter Time

NOTE: The air valve timer is located next to the tube connector on the air valve body. The timer is capped with a filter to prevent dirt build-up on the timer. The air valve timing can be adjusting from 5–60 seconds.

1. Remove filter cap and use a screwdriver to tighten or loosen the timer (Figure 13). Turning the timer clockwise increases the time; turning the timer counterclockwise decreases the time.
2. Continue to adjust until the timer is set at desired length.
3. Replace filter cap over the timer.

Tube Connection Leaks

1. Push in the white manual release button while pulling the tube out (see Figure 13) to disconnect the tube at the tube fitting. No tools are needed.
2. To correct a leak, press tubing firmly into the tube fitting and make sure it is seated.
3. If leak persists, remove tubing from the fitting, and trim the tubing end square with a razor-sharp knife. If leak continues, replace the fitting or contact your Bradley representative for assistance.

Metering Air Valve Troubleshooting Instructions (Figure 13) *continued...*

Metering Air Valve Troubleshooting

Problem: Water is dripping from the streamformers

Cause: Debris on valve seat or orifices

Step 1: Clean and inspect valve seat

1. Remove screws and disassemble metering valve.
2. Clean valve seat and inspect for deep gouges or scratches. Replace if necessary.
3. Remove all debris that may be clogging center hole of the plastic diaphragm assembly and off-center hole in the rubber diaphragm.

Problem: Valve will not shut off

Cause: Timing mechanism is clogged

Step 1: Clean timing mechanism

1. Blow water and debris from perforated metal sleeve of timing mechanism if compressed air is available.
2. Turn the adjusting screw in all the way but do not force screw.
3. Turn adjusting screw out to desired cycle time.

Problem: Valve will not turn on

Cause: Water is not being supplied to unit

Step 1: Open all stops on the valve assembly

Problem: Timing cannot be adjusted for more than five seconds

Cause: There is an air leak

Step 1: Check assembly

1. Check all tubing and fittings for proper assembly.
2. Tighten all screws which hold valve together.

Problem: Pushbutton does not work properly

Cause: Air volume may not be sufficient to operate valve

Step 1: Check all fittings for air leaks

Problem: Valve cycles properly, but water does not form streams and drips from streamformer

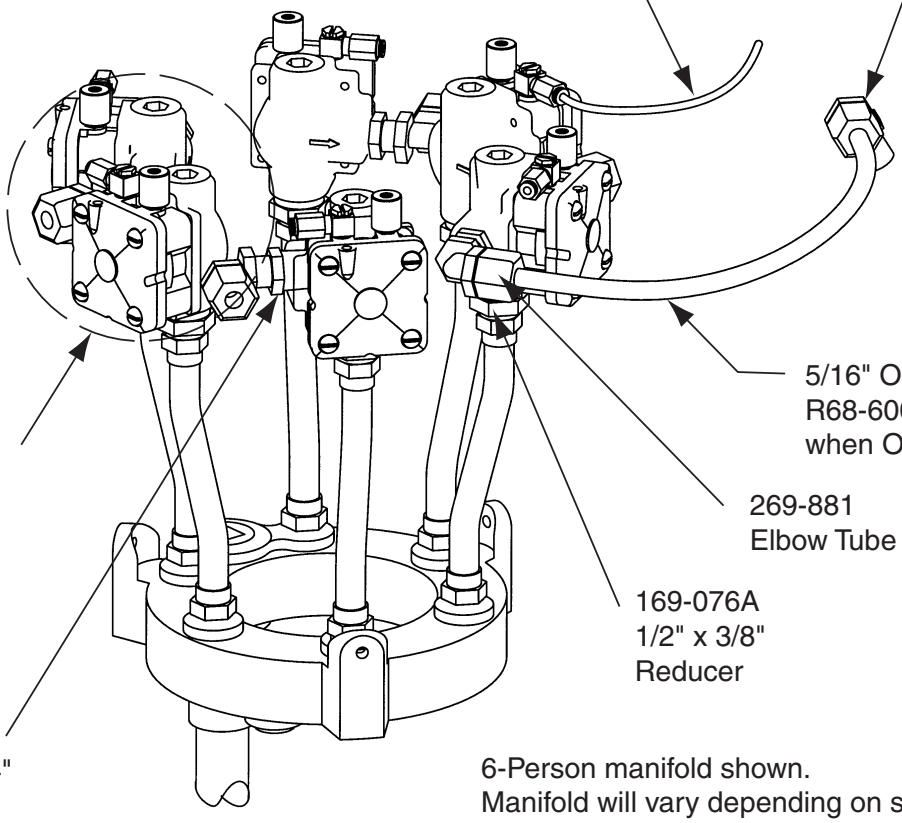
Cause: Flow control is clogged or is not seated properly

Step 1: Inspect and clean air flow control assembly

1. Remove 1/4" tubing and 1/4" tube connector fitting from metering air valve (Figure 13).
2. Inspect flow control and remove debris that may be clogging assembly.
3. Replace fitting using Teflon™ tape on pipe threads.
4. Replace 1/4" tubing as follows: cut 1/4" from the end of the tube to make sure the end is square, then insert into tube connector fitting.

Metering Air Valve (Figure 13a)

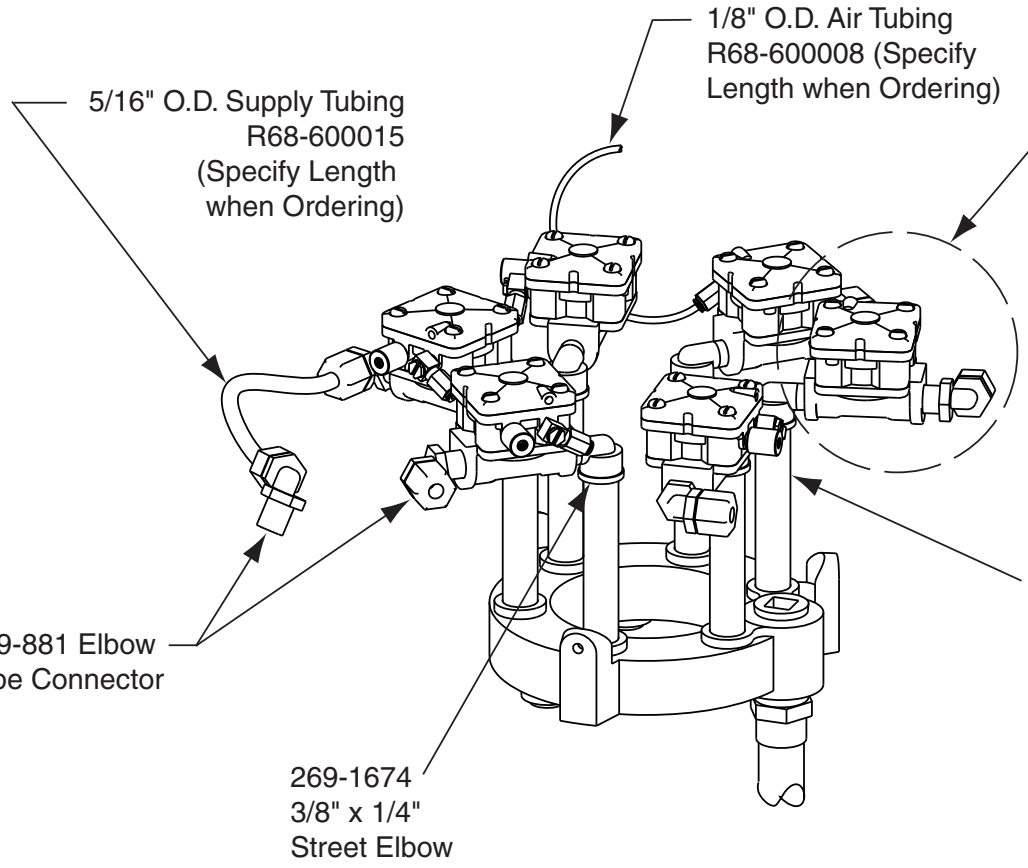
For Column Showers (1998 — 2000) Version



6-Person manifold shown.
Manifold will vary depending on showerhead configuration. Parts identified are typical for 2-6 person columns with metering air valve. Contact Bradley Representative for part numbers not listed.

Metering Air Valve (Figure 13b)

For Column Showers (2000 — Present) Version



6-Person manifold shown.
Manifold will vary depending on showerhead configuration. Parts identified are typical for 2-6 person columns with metering air valve. Contact Bradley Representative for part numbers not listed.

Metering Air Valve (Figure 13c)

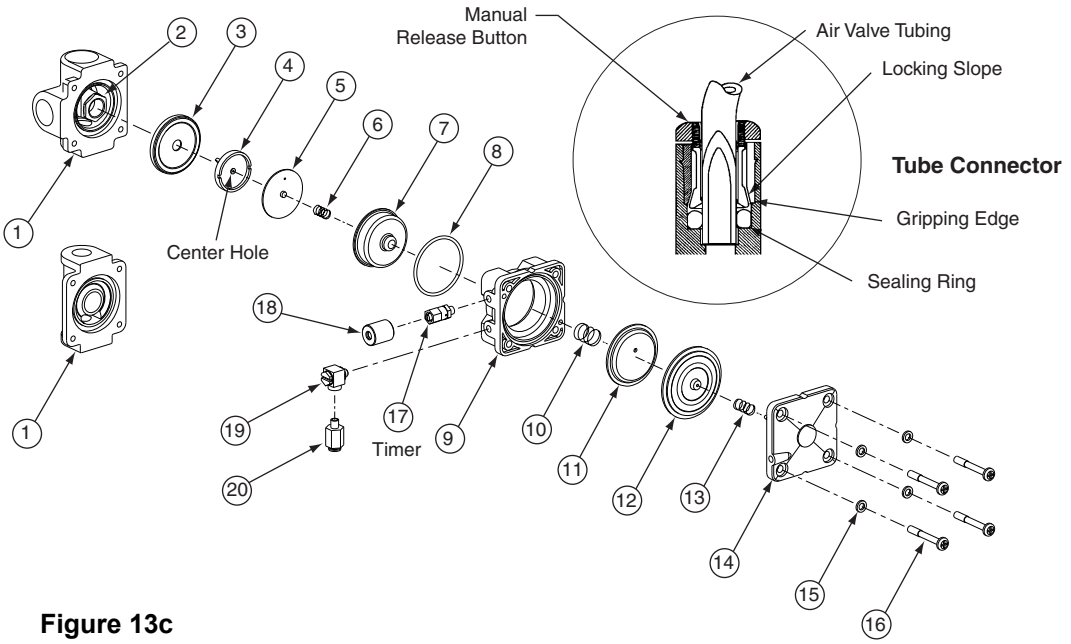


Figure 13c

Parts List

Item	Part No.	Description	Assembly	Valve Kit S65-110	Repair Kit S73-054C
			Qty		
1	118-183	Lower Valve Body (1998 - 2000)	1		
1	118-226	Lower Valve Body (2000 To Present)	1		
2	117-036	Valve Seat	1		
3	269-665	Rubber Diaphragm	1	1	1
4	269-664	Plastic Disk	1	1	1
5	179-082	Stainless Steel Disk	1	1	1
6	135-053	Spring	1	1	1
7	269-662	Divider Plate	1		1
8	125-001DT	O-Ring	1		1
9	118-247	Air Valve Body	1		1
10	135-052	Spring for Magnet	1		1
11	269-660	Magnet Assembly	1		1
12	269-659	Air Diaphragm	1		1
13	135-051	Diaphragm Spring	1		1
14	269-657	Valve Cover	1		1
15	142-002CR	Lockwasher	4		
16	160-313	Screw	4		
17	S27-254	Timer Assembly	1		1
18	269-656	Cover – Timer Assy.	1		1
19	269-1186	Fitting — Adj. "L"	1		
20	169-890	Tube Connector	1		
	215-913	Air Valve Instruction Sheet		1	

Metering Air Valve Troubleshooting Instructions (Figure 13c)

How They Work

Refer to Figure 13c.

1. A pulse of air is created at the air diaphragm by pressing the pushbutton.
2. The pulse of air travels through the 1/8" air tubing into the lower port on the valve, up through the magnet (housed within Item 9) and diaphragm, and exits through the top cover of the valve.
3. Releasing the pushbutton draws all the air out of the valve creating a vacuum inside the valve.
4. The top diaphragm acts as a check and does not let any air enter the valve through the top cover.
5. The vacuum created allows the magnet to drop down in the valve, attracting the armature plate.
6. The rising armature plate allows the water pressure to push the seat diaphragm off the valve seat.
7. Water flows through the seat and out to the sprayhead.
8. Air is pulled into the valve through the timer by the vacuum on the inside of the valve.
9. The incoming air breaks the vacuum on the inside of the valve (Item 9).
10. The amount of air entering the valve through the timer determines the metering cycle.
11. When the vacuum is eliminated, the magnet spring pushes the magnet back to its original position.
12. The armature plate drops down to its original position, pushing the seat diaphragm back down on the seat closing the valve.
13. A small amount of water passes through the diaphragm to equalize the pressure on either side of the diaphragm.

Adjust Air Valve Meter Time

NOTE: The air valve timer is located next to the tube connector on the air valve body. The timer is capped with a filter to prevent dirt build-up on the timer. The air valve timing can be adjusting from 5–60 seconds.

1. Remove filter cap and use a screwdriver to tighten or loosen the timer (Figure 13c). Turning the timer clockwise increases the time; turning the timer counterclockwise decreases the time.
2. Continue to adjust until the timer is set at desired length.
3. Replace filter cap over the timer.

Tube Connection Leaks

1. Push in the white manual release button while pulling the tube out (see Figure 13c) to disconnect the tube at the tube fitting. No tools are needed.
2. To correct a leak, press tubing firmly into the tube fitting and make sure it is seated.
3. If leak persists, remove tubing from the fitting, and trim the tubing end square with a razor-sharp knife. If leak continues, replace the fitting or contact your Bradley representative for assistance.

Metering Air Valve Troubleshooting Instructions (Figure 13c) *continued...*

Metering Air Valve Troubleshooting

Problem: Water is dripping from the streamformers

Cause: Debris on valve seat or orifices

Step 1: Clean and inspect valve seat

1. Remove screws and disassemble metering valve.
2. Clean valve seat and inspect for deep gouges or scratches. Replace if necessary.
3. Remove all debris that may be clogging center hole of the plastic diaphragm assembly and off-center hole in the rubber diaphragm.

Problem: Valve will not shut off

Cause: Timing mechanism is clogged

Step 1: Clean timing mechanism

1. Blow water and debris from perforated metal sleeve of timing mechanism if compressed air is available.
2. Turn the adjusting screw in all the way but do not force screw.
3. Turn adjusting screw out to desired cycle time.

Problem: Valve will not turn on

Cause: Water is not being supplied to unit

Step 1: Open all stops on the valve assembly

Problem: Timing cannot be adjusted for more than five seconds

Cause: There is an air leak

Step 1: Check assembly

1. Check all tubing and fittings for proper assembly.
2. Tighten all screws which hold valve together.

Problem: Pushbutton does not work properly

Cause: Air volume may not be sufficient to operate valve

Step 1: Check all fittings for air leaks

Problem: Valve cycles properly, but water does not form streams and drips from streamformer

Cause: Flow control is clogged or is not seated properly

Step 1: Inspect and clean air flow control assembly

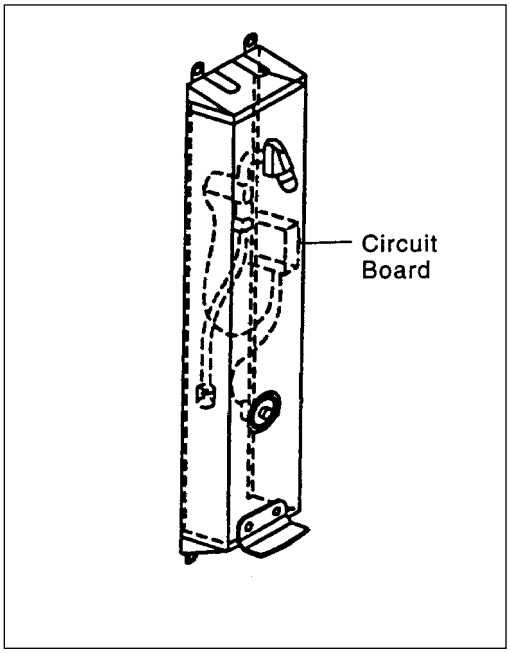
1. Remove 1/4" tubing and 1/4" tube connector fitting from metering air valve (Figure 13c).
2. Inspect flow control and remove debris that may be clogging assembly.
3. Replace fitting using Teflon™ tape on pipe threads.
4. Replace 1/4" tubing as follows: cut 1/4" from the end of the tube to make sure the end is square, then insert into tube connector fitting.

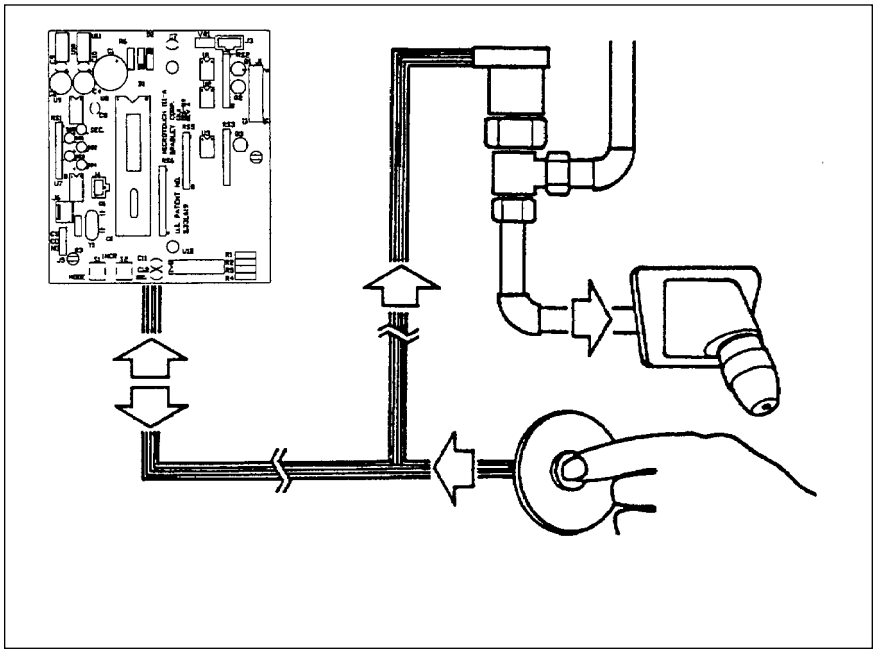
Micro-Touch ™ (Figure 14)

How Micro-Touch TM III works

See below.

1. Pushbutton sends electrical impulse (millivolts) to circuit board.
2. Circuit board controls metering style and timing sent to solenoid.
3. Solenoid receives signals from circuit board and open/closes water path-way to outlet.

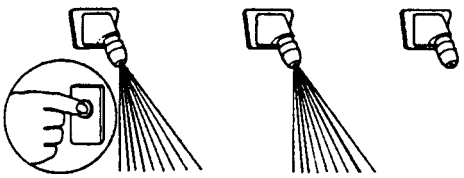




Metering Mode Options

Meter Only: One press of the activation button activates the cycle and the fixture will complete its present cycle even if the button is pressed at subsequent times during the cycle.

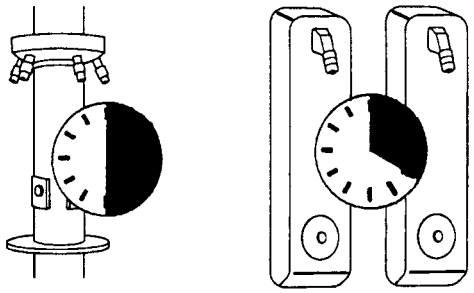
Typical Application: Standard operation for most applications and fixtures.



Micro-Touch ™ (Figure 14 Continued)

Comby Mode: Allows the flexibility of setting the timing functions of two stations (solenoids) independently of the other four.

Typical Application: Separate timing of two shower stations from timing of four others.**Delay**



Time: After a cycle is complete, a delay period can be set to prevent the initiation of a second cycle for a preset length of time.

Typical Application: For use in public areas where building owner does not want user to immediately restart timing cycle. Typical uses include physical education facilities and swimming pool areas.

Circuit Board Pushbuttons and LEDs (Figure 14 continued)

Pushbuttons

There are two pushbuttons on the circuit board—one labeled **MODE**, and one labeled **SEC**. The **MODE** button is used to program the metering mode, and the **SEC** button is used to program the cycle time for the mode in increments of 1 second. Also, the **MODE** and **SEC** buttons can be used together to program the cycle time in increments of 15 seconds (see **Program the Circuit Board** on following pages).

LEDs

- There are five LEDs on the circuit board—they are labeled **DS1, DS2, DS3, DS4**, and **DS5** .
- LED **DS5**: When the **MODE** pushbutton is pressed, LED **DS5** flashes repeatedly until the **MODE** pushbutton is released. The number of times you allow LED **DS5** to flash determines the metering mode programmed (see **Program the Circuit Board**).

  When the **SEC** pushbutton is pressed, LED **DS5** flashes repeatedly until the SEC pushbutton is released. When programming the cycle time for a metering mode, each flash of LED **DS5** equals 1 second of cycle time.
- LEDs **DS1, DS2, DS3**, and **DS4:** Different combinations of these LEDs light, and remain lit, once you have programmed a metering mode using the **MODE** pushbutton. The combination of lit LEDs indicates the metering mode you have programmed (see **Program the Circuit Board**).

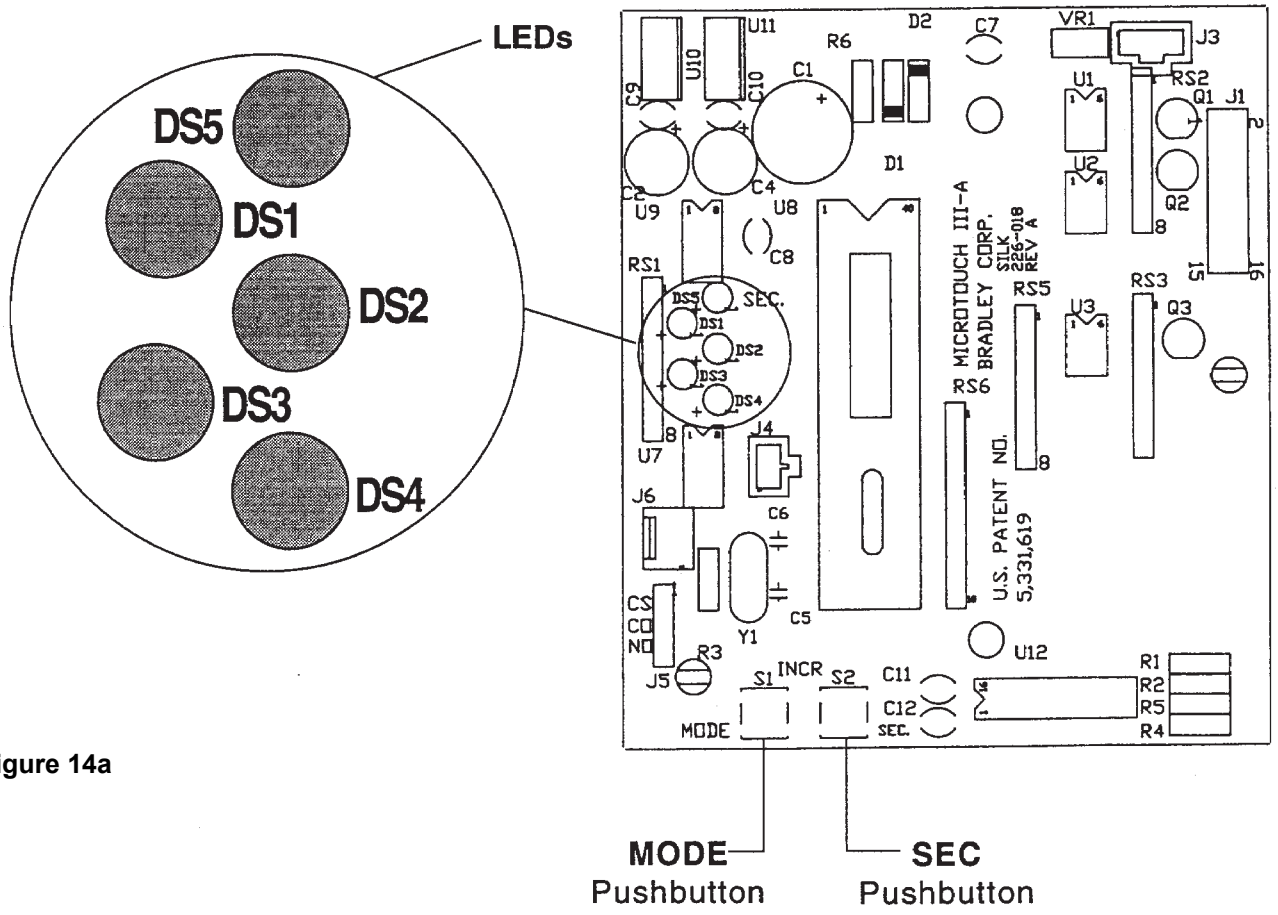


Figure 14a

Program the Circuit Board (Figure 14 Continued)

Factory preset cycle timing

The fixture cycle timing and metering option is preset at the factory. The preset for showers is the Meter Only mode with a cycle time of 20 seconds. This option also includes a built-in delay from the completion of the metered cycle of one second until the pushbutton can again be activated. If you want to change the mode and/or cycle time, see the procedures for the desired mode on the following pages.

Pressing the MODE and SEC pushbuttons

IMPORTANT: Sharp-tipped tools can puncture the waterproof seal that covers the pushbuttons. Use only tools with blunt tips to press the MODE and SEC pushbuttons.

The **MOD**E and **SEC** pushbuttons are accessed through a grommet on top of the circuit board housing (see Figure 14b below). To press a button, insert a blunt-tipped tool (i.e.: small screwdriver) through the hole in the grommet.

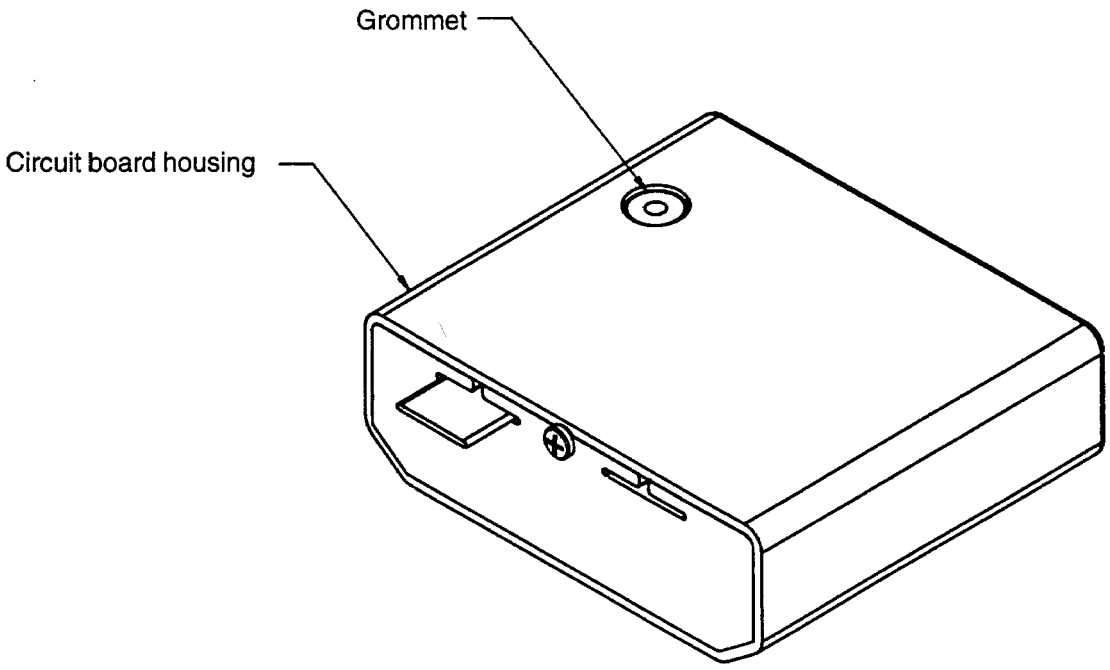


Figure 14b

Program the Circuit Board (Figure 14 Continued)

Program Meter Only mode

Program mode:

1. Press **MODE** until LED **DS5** flashes one time.

   Result: LED **DS2** should be lit to indicate that the circuit board is programmed for the Meter Only mode.

Program cycle time (if different than factory-set time):

1. Press **MODE** until LED **DS5** flashes four times.

   Result: LED **DS2** and **DS3** should be lit to indicate that you are ready to enter the cycle time.

2. Enter the cycle time in 1-second or 15-second increments.

- **1-second increments:** Press **SEC** until the number of times that LED **DS5** flashes equals the number of seconds for the desired cycle time.
- **15-second increments:** Remove the circuit board from its housing (see following pages for instructions). Press **SEC** and **MODE** at the same time—each flash of LED **DS5** equals 15 seconds of cycle time. Release **SEC** and **MOD**E when the desired time has been entered.

  Result: Only LED **DS2** should be lit to indicate that the circuit board is programmed for the Meter Only mode.

Program Double Touch mode

Program mode:

1. Press **MODE** until LED **DS5** flashes two times.

   Result: LED **DS1** should be lit to indicate that the circuit board is programmed for the Double Touch mode.

Program cycle time (if different than factory-set time):

1. Press **MODE** until LED **DS5** flashes four times.

   Result: LED **DS1** and **DS3** should be lit to indicate that you are ready to enter the cycle time.

2. Enter the cycle time in 1-second or 15-second increments.

- **1-second increments**: Press **SEC** until the number of times that LED **DS5** flashes equals the number of seconds for the desired cycle time.
- **15-second increments:** Remove the circuit board from its housing (see following pages for instructions). Press **SEC** and **MODE** at the same time—each flash of LED **DS5** equals 15 seconds of cycle time. Release **SEC** and **MODE** when the desired time has been entered.

  Result: Only LED **DS1** should be lit to indicate that the circuit board is programmed for the Double Touch mode.

Program Comby mode

Program mode:

1. Press **MODE** until LED **DS5** flashes three times.

   Result: LED **DS1** and **DS2** should be lit to indicate that the circuit board is programmed for the Comby mode.

Program cycle time (if different than factory-set time):

1. To assign lavatory (long) time, press **MODE** until LED DS5 flashes four times.

   Result: LED DS1, DS2, and DS3 should be lit to indicate that you are ready to enter the lavatory (long) cycle time.

Program the Circuit Board (Figure 14 Continued)

2. Enter the lavatory (long) cycle time in 1-second or 15-second increments.

- **1-second increments:** Press **SEC** until the number of times that LED **DS5** flashes equals the number of seconds for the desired cycle time.
- **15-second increments:** Remove the circuit board from its housing (see following pages for instructions) press **SEC** and **MODE** at the same time—each flash of LED **DS5** equals 15 seconds of cycle time. Release **SEC** and **MODE** when the desired time has been entered.

Result: LEDs **DS1** and **DS2** should be lit to indicate that the circuit board is programmed for the Comby mode.

3. To assign flush (short) cycle time, press **MODE** until LED **DS5** flashes five times.

Result: LED **DS1, DS2**, and **DS4** should be lit to indicate that you are ready to enter the lavatory (long) cycle time.

4. Enter the flush (short) cycle time in 1-second or 15-second increments.

- **1-second increments:** Press **SEC** until the number of times that LED **DS5** flashes equals the number of seconds for the desired cycle time.
- **15-second increments:** Remove the circuit board from its housing (see following pages for instructions) press **SEC** and **MODE** at the same time—each flash of LED **DS5** equals 15 seconds of cycle time. Release **SEC** and **MODE** when the desired time has been entered.

Result: LEDs **DS1** and **DS2** should be lit to indicate that the circuit board is programmed for the Comby mode.

Program Delay Time

1. Press **MODE** until LED **DS5** flashes six times.

Result: No new LEDs are lit, and you are ready to enter the Delay Time.

2. Enter the flush (short) cycle time in 1-second or 15-second increments.

- **1-second increments:** Press **SEC** until the number of times that LED **DS5** flashes equals the number of seconds for the desired Delay Time.
- **15-second increments:** Remove the circuit board from its housing (see next page for instructions) press **SEC** and **MODE** at the same time—each flash of LED **DS5** equals 15 seconds of cycle time. Release **SEC** and **MODE** when the desired time has been entered.

Result: The Delay Time has been programmed.

Program the Circuit Board (Figure 14 Continued)

Remove circuit board from housing

NOTE: Follow the procedure below only when you want to access the SEC and MODE pushbuttons to program cycle times in increment s of 15 seconds.

1. Remove the pan head screw that secures the access panel to the housing (see Figure below).

IMPORTANT: Do not allow the circuit board to come in cont act with metal surfaces. Since power is still being supplied to the circuit board, cont act with metal surfaces can cause the board to short-circuit.

2. Pull the circuit board from the housing to access the MODE and SEC pushbuttons.

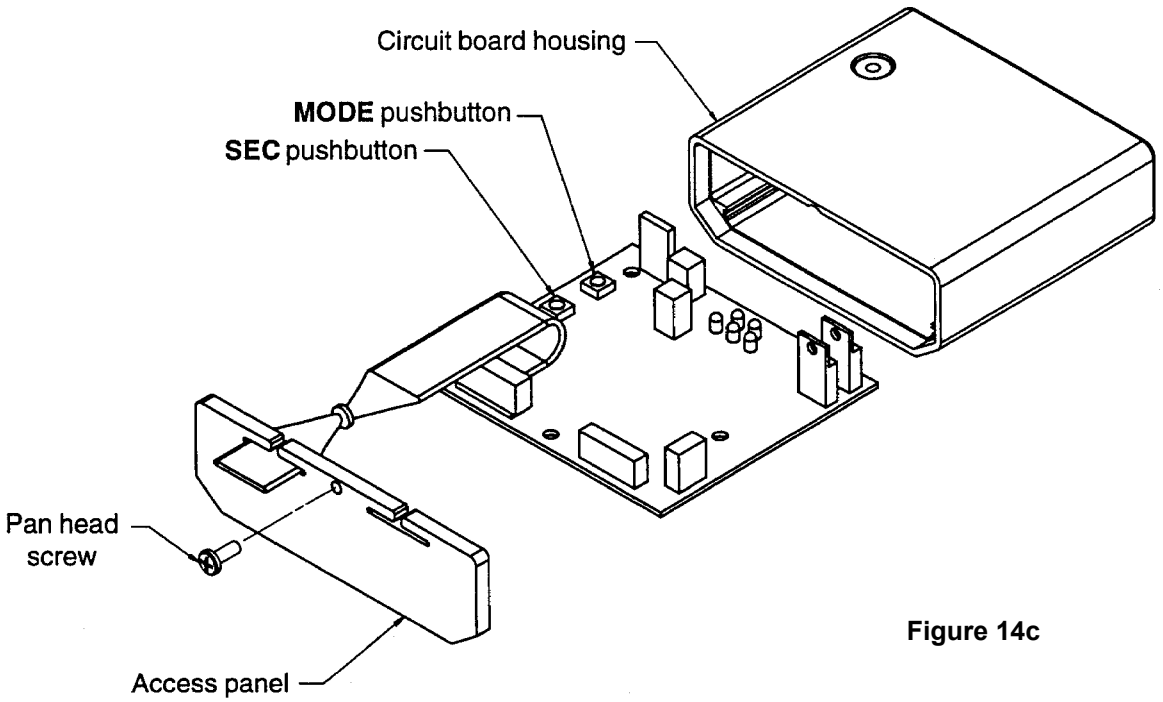
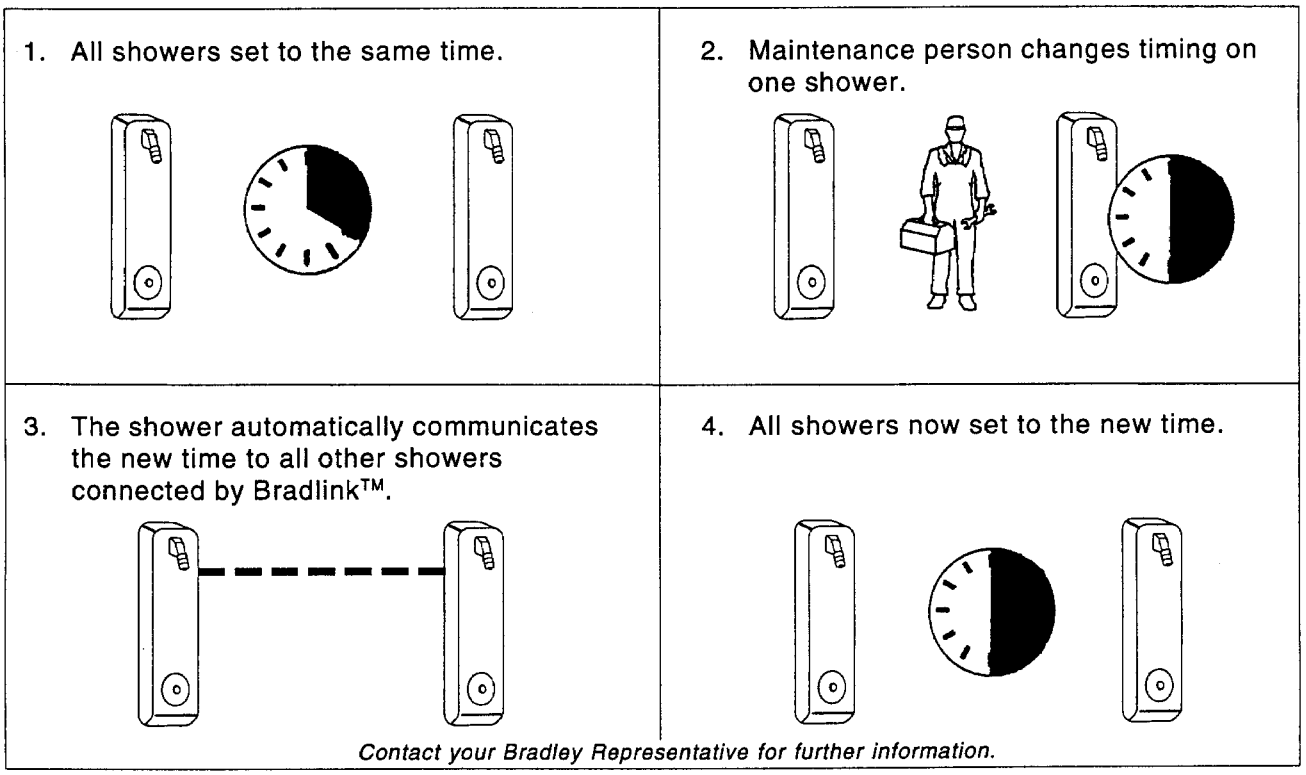


Figure 14c

Circuit Board Pushbuttons and LEDs (Figure 14 continued)

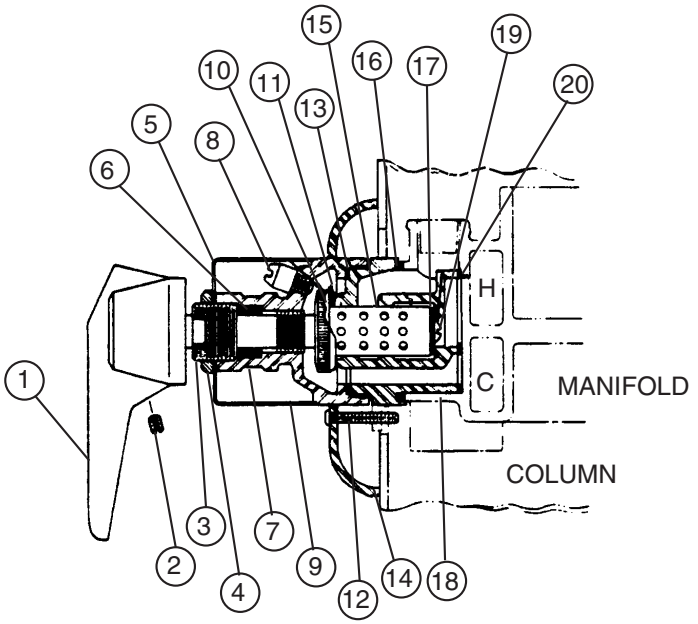
Bradlink™ Option Description

Bradley offers a unique communications link as standard equipment. The Bradlink™ feature (when specified) will allow all fixtures utilizing the Micro-Touch™ system to transfer timing information from one circuit board to another. With two conductor, 22 AWG, twisted pair wire, multiple fixtures can be "Bradlinked" together. For example, if a facility has a room with 10 fixtures, a maintenance person can go to any one of the fixtures, set the metering time, and the entire room would be automatically reset to the "new" information. There is no need to time each valve or fixture individually.


1. All showers set to the same time.
2. Maintenance person changes timing on one shower.
3. The shower automatically communicates the new time to all other showers connected by Bradlink™.
4. All showers now set to the new time.
Contact your Bradley Representative for further information.

Pressure Balancing Mixing Valve S27-022 (Figure 15)

For Column Showers



NOTE:
Can be replaced with Bradley Equa-Flo S65-075 (2-5 Person) S65-076 (6 Person)

NOTE:
Does not include escuthcheon and screws.

Parts List

Item	Part No.	Description	Column Valve Assembly S27-022	Gasket Kit S65-013
			Qty	
1	169-264	Handle	1	
2	169-265	Handle Set Screw	1	1
3	169-258	Packing Nut	1	
4	169-267	Lock Nut	1	
5	169-274	Dial	1	
6	169-266	Packing	2	2
7	169-257	Cap	1	
8	S27-092	Limit Stop Assembly	1	
9	169-263	Dome Cover	1	
10	169-259	Cold Washer Retainer	1	1
11	169-262	Cold Washer	1	1
12	160-177	Escutcheon Screw	2	
13	169-268	Cap Gasket	1	1
14	150-032	Escutcheon, 2-5 Person Column	1	
14	150-034	Escutcheon, 6 Person Column	1	
15	S27-067	Flow Control Spindle	1	
16	169-269	Top Seat Gasket	1	1
17	169-260	Hot Washer	1	1
18	169-255	Body Seat	1	
19	169-261	Hot Washer Screw	1	1
20	169-270	Bottom Seat Gasket	1	1

Pressure Balancing Mixing Valve S27-022 (Figure 15)

Service Suggestions:

1. Open valve to about warm position.
2. Loosen handle screw and remove handle.
3. Remove escutcheon.
4. Unscrew dial lock nut and remove dome cover.
5. Unscrew Valve Cap with complete assembly.
6. Leave Packing Nut in place while unscrewing cap to avoid distorting end of cap.
7. When cap is unscrewed, entire working unit may be removed.

The perforated cylinder is an integral part of Flow Control Spindle and does not unscrew. The cylinder is hollow and contains a piston. The piston is free-moving and provides pressure-balancing features of valve. By sliding back and forth under any variation of pressure. Piston opens or throttles Hot and Cold Water ports to control proper delivery ratio of each, and so maintains constant even temperature. Control action is entirely automatic, the Piston is sealed into cylinder, neither Cylinder nor Piston should be tampered with. Under no circumstances should wrench or pliers be used on Cylinder. It is a carefully machined unit and any marking or gouging will destroy it's function.

The Piston should be free inside Cylinder at all times and should click back and forth when assembly is shaken. After long service in "rugged" waters, it is possible that mineral or other deposits may block the Piston's action. Normally, tapping Handle End of Spindle against a solid object will free the piston. If it is so solidly plugged that this is not effective, replace entire Spindle Assembly.

Ordinary service requires only replacement of Hot and Cold Washers. To replace Cold Washer, remove large knurled Washer Retainer. To replace Hot Washer, remove Washer Screw. It is essential that both Hot and Cold Washers be replaced at the same time, even if only one appears to require attention. Washer and Gasket Kit should be used for this service. Use only Pressure Balancing Valve Washers.

In extreme cases or after long years of service, Body Seat may require replacement. Body Seat is removable after removal of four mounting screws.

NOTE: When reassembling valve after any repairs, be sure Cylinder is drawn close to Cap before screwing Cap back into position.

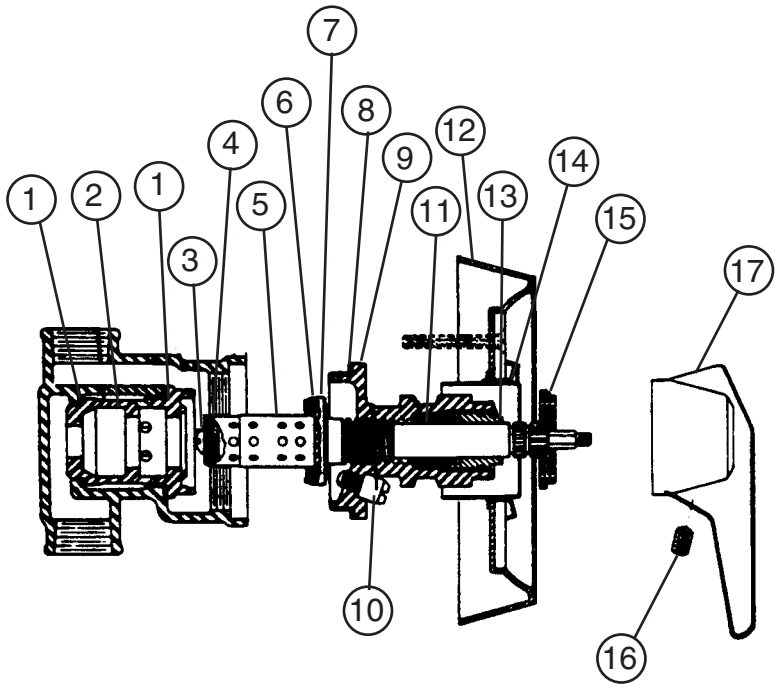
Valves are equipped with "LIMIT STOP". This Stop, located below Dome Cover, can be used to limit temperature of tempered water discharge.

TO ADJUST:

1. Open valve and turn handle to maximum desired discharge temperature.
2. Unscrew LIMIT STOP Cap.
3. Screw in adjusting set screw until it seats.
4. While still holding valve open to desired position, replace LIMIT STOP Cap and tighten securely against its gasket.

Pressure Balancing Mixing Valve S27-025 (Figure 16)

For Panelon and Wall Showers



NOTE:
Includes escuthcheon and screws.

Parts List

Item	Part No.	Description	Column Valve Assembly S27-025	Gasket Kit S65-048
			Qty	
1	169-408	Top & Bottom Seat Gasket	1	
2	169-409	Renewable Seat	1	
3	169-261	Hot Washer Screw	1	1
4	169-260	Hot Washer	1	1
5	169-404	Flow Control Spindle	1	
6	169-262	Cold Washer	1	1
7	169-259	Cold Washer Retainer	1	1
8	169-402	Cap Gasket	1	1
9	169-401	Cap	1	
10	S27-092	Limit Stop Assembly	1	
11	169-266	Packing	1	1
12	S27-091	Escutcheon and Screw	1	
13	169-399	Packing Nut	1	
14	169-398	Dome Cover	1	
15	169-397	Dome Lock Nut	1	
16	169-265	Handle Screw	1	1
17	169-264	Handle	1	

Pressure Balancing Mixing Valve S27-025 (Figure 16)

Service Suggestions:

1. Open valve to about warm position.
2. Loosen handle screw and remove handle.
3. Remove escutcheon.
4. Unscrew dial lock nut and remove dome cover.
5. Unscrew Valve Cap with complete assembly.
6. Leave Packing Nut in place while unscrewing Cap to avoid distorting end of Cap.
7. When Cap is unscrewed, entire working unit may be removed.

The perforated cylinder is an integral part of Flow Control Spindle and does not unscrew. The cylinder is hollow and contains a piston. The piston is free-moving and provides pressure-balancing feature of valve. By sliding back and forth under any variation of pressure, Piston opens or throttles Hot and Cold Water ports to control proper delivery ratio of each, and so maintains constant even temperature. Control action is entirely automatic, the Piston is sealed into cylinder, neither Cylinder nor Piston should be tampered with. Under no circumstances should wrench or pliers be used on Cylinder. It is a carefully machined unit and any marking or gouging will destroy it's function.

The Piston should be free inside Cylinder at all times and should click back and forth when assembly is shaken. After long service in "rugged" waters, it is possible that mineral or other deposits may block the Piston's action. Normally, tapping Handle End of Spindle against a solid object will free the piston. If it is so solidly plugged that this is not effective, replace entire Spindle Assembly.

Ordinary service requires only replacement of Hot and Cold Washers. To replace Cold Washer, remove large knurled Washer Retainer. To replace Hot Washer, remove Washer Screw. It is essential that both Hot and Cold Washers be replaced at the same time, even if only one appears to require attention. Washer and Gasket Kit should be used for this service. Use only Pressure Balancing Valve Washers.

In extreme cases or after long years of service, Body Seat may require replacement. Body Seat is removable after removal of four mounting screws.

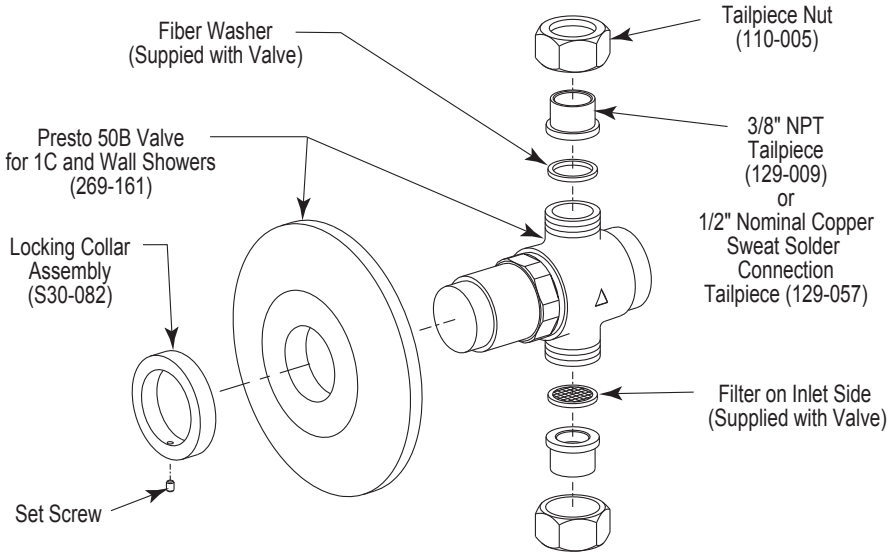
NOTE: When reassembling valve after any repairs, be sure Cylinder is drawn close to Cap before screwing Cap back into position.

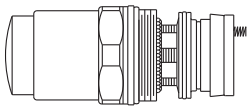
Valves are equipped with "LIMIT STOP". This Stop, located below Dome Cover, can be used to limit temperature of tempered water discharge.

TO ADJUST:

1. Open valve and turn handle to maximum desired discharge temperature.
2. Unscrew LIMIT STOP Cap.
3. Screw in adjusting set screw until it seats.
4. While still holding valve open to desired position, replace LIMIT STOP Cap and tighten securely against its gasket.

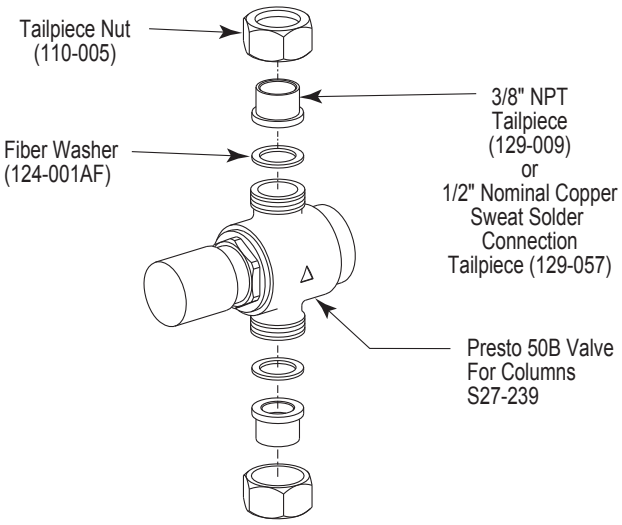
Presto Valves & Cartridges (Figure 17)

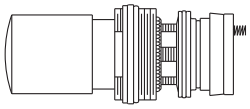




Repair Cartridge for
Presto 50B Valve
in 1C and Wall Showers
(269-1577)

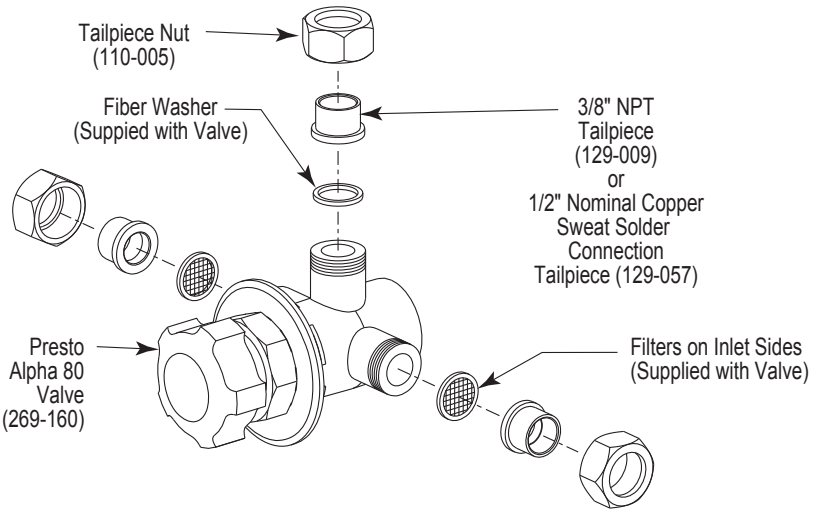
PRESTO 50B VALVE FOR 1C AND WALL SHOWERS

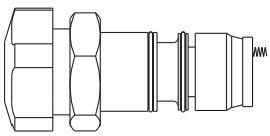




Repair Cartridge for
Presto 50B Valve
in Column Showers
(269-1578)

PRESTO 50B VALVE FOR COLUMN SHOWERS

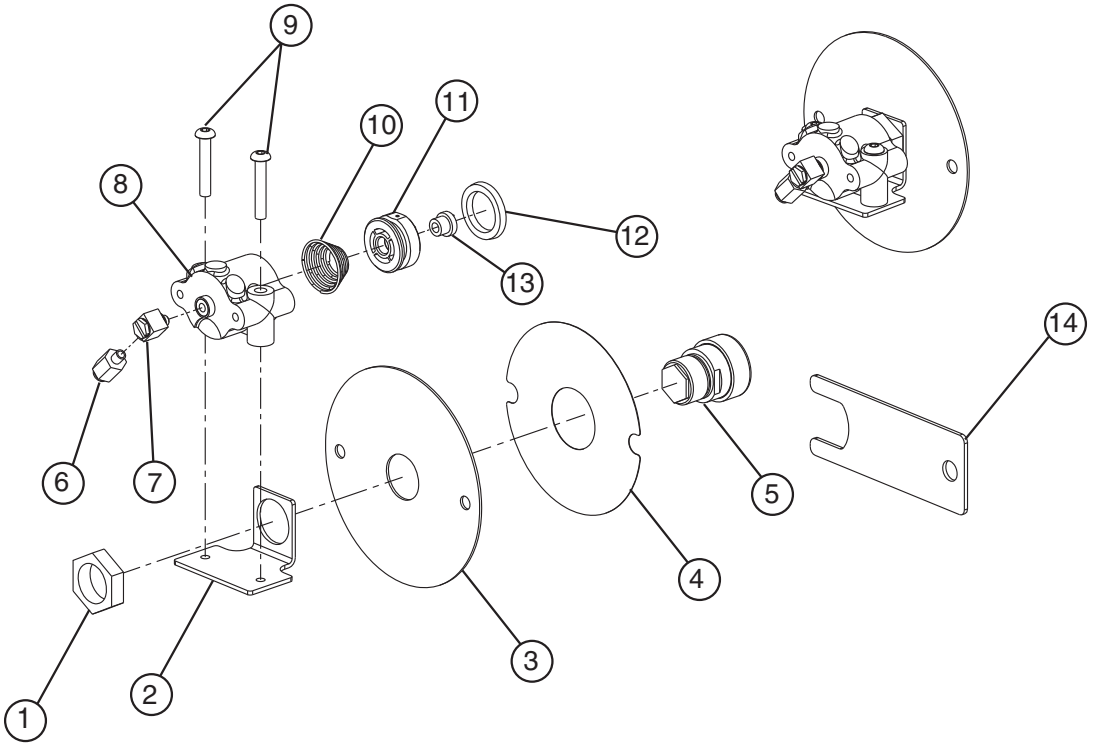




Repair Cartridge for
Presto Alpha 80 Valve
(269-1800)

PRESTO ALPA 80 VALVE

Pushbutton Air Valve Repair Parts (Figure 18)

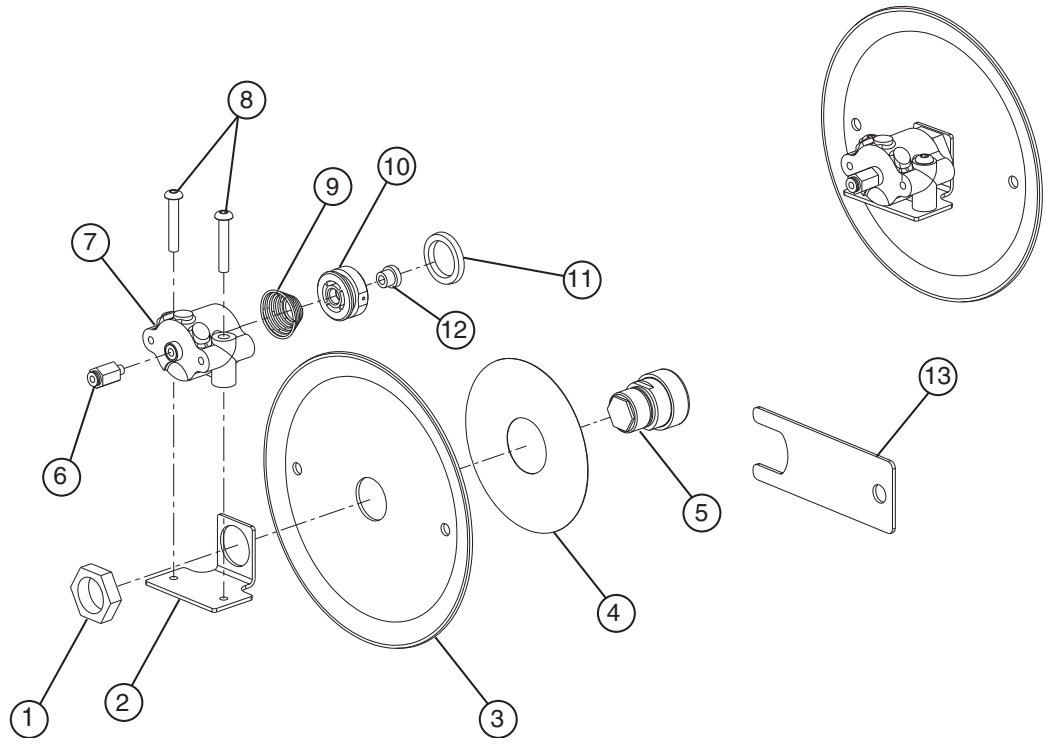


Parts List

Item	Part No.	Description	Pushbutton Assembly S45-1712 Qty	Repair Kit S65-223 Qty
1	110-115	Hex Nut 1/2 NPSM	1	
2	140-743	Actuator Bracket	1	
3	159-400	Mounting Plate	1	
4	204-501	Decal — Air Valve	1	
5	S08-324	Pushbutton Ass'y.	1	
6	169-890	1/8 Tube Connector	1	1
7	269-1186	Fitting — Adj. "L"	1	1
8	118-279	Molded Actuator Body	1	1
9	160-165	Screw	2	2
10	135-065	Spring	1	1
11	119-227	Molded Piston	1	1
12	125-099	U-Cup	1	1
13	130-023	Wrench		1
	S45-125	Lubricant		1

NOTE: Lubricate "U" cup (Item 12) on plunger with lubricant (S45-125). Apply thin coat all around I.D. - 1" deep. Do not use spray silicone or petroleum based lubricant s on components.

Pushbutton Air Valve Repair Parts (Figure 19)



Parts List

Item	Part No.	Description	Pushbutton Assembly S45-1713 Qty	Repair Kit S65-224 Qty
1	110-115	Hex Nut 1/2 NPSM	1	
2	140-743	Actuator Bracket	1	
3	159-400	Mounting Plate	1	
4	204-501A	Decal — Air Valve	1	
5	S08-324	Pushbutton Ass'y.	1	
6	169-890	1/8 Tube Connector	1	1
7	118-279	Molded Actuator Body	1	1
8	160-165	Screw	2	2
9	135-065	Spring	1	1
10	119-227	Molded Piston	1	1
11	125-099	U-Cup	1	1
12	130-023	Wrench		1
	S45-125	Lubricant		1

NOTE: Lubricate "U" cup (Item 11) on plunger with lubricant (S45-125). Apply thin coat all around I.D. - 1" deep. Do not use spray silicone or petroleum based lubricant s on components.

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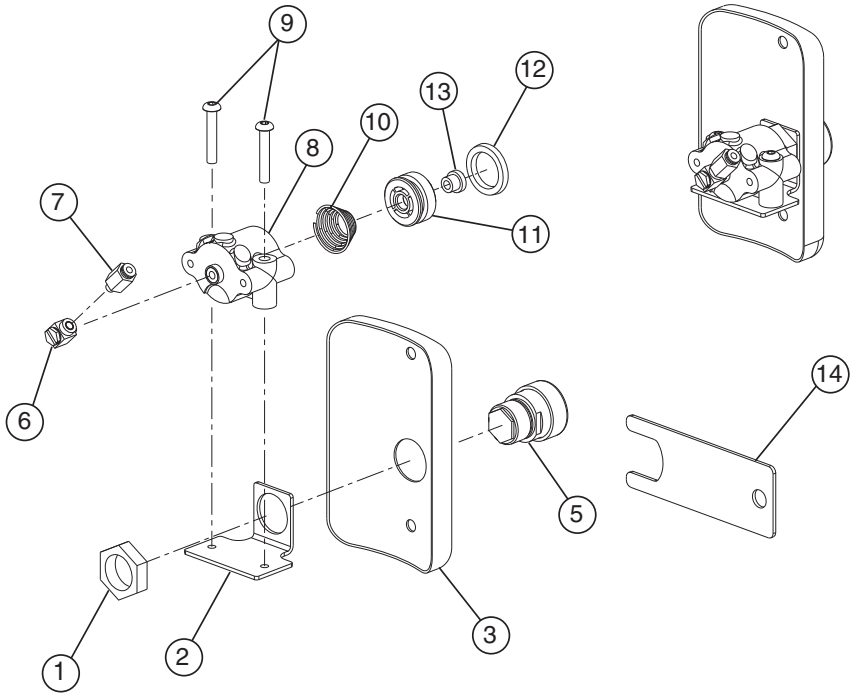
Pushbutton Air Valve Repair Parts For Column Showers (Figure 32)



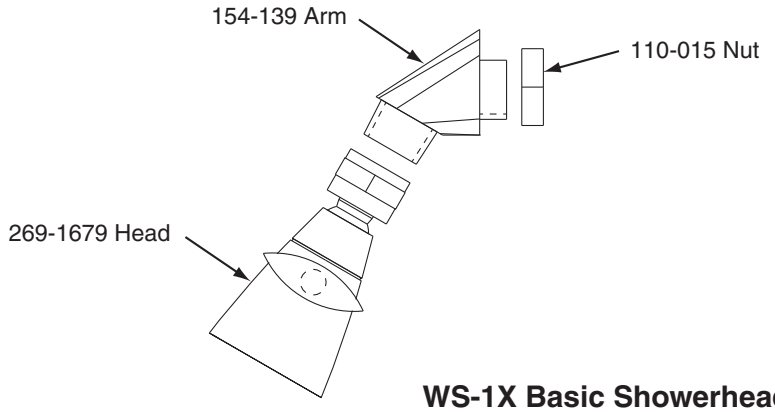
Parts List

Item	Part No.	Description	Pushbutton Assembly S45-1934A 2-5 Person	Pushbutton Assembly S45-1934B 6 Person	Repair Kit S65-223
			Qty		
1	110-115	Hex Nut 1/2 NPSM	1	1	
2	140-743	Actuator Bracket	1	1	
3	150-174	Escutcheon	1		
3	150-177	Escutcheon		1	
4	204-522	Nameplate	1	1	
5	S08-324	Pushbutton Ass'y.	1	1	
6	269-1186	Fitting – Adj “L”	1	1	1
7	169-890	1/8 Tube Connector	1	1	1
8	118-279	Molded Actuator Body	1	1	1
9	160-165	Screw	2	2	2
10	135-065	Spring	1	1	1
11	119-227	Molded Piston	1	1	1
12	125-099	U-Cup	1	1	1
13	130-023	Wrench			1
	S45-125	Lubricant			1

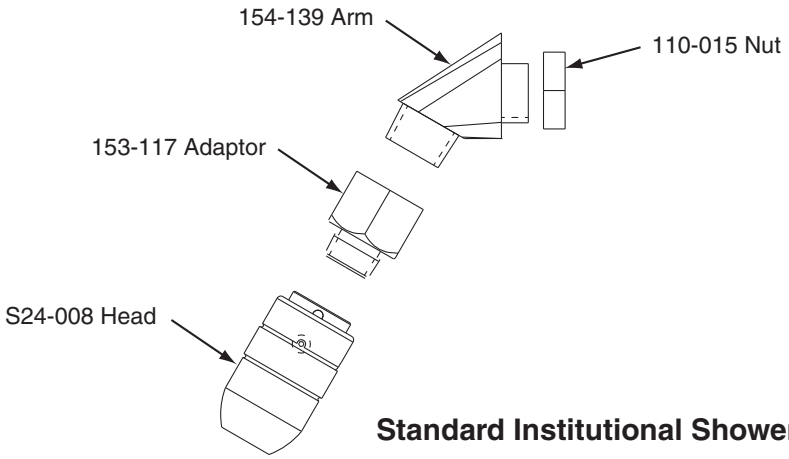
NOTE: Lubricate "U" cup (Item 11) on plunger with lubricant (S45-125). Apply thin coat all around I.D. - 1" deep. Do not use spray silicone or petroleum based lubricant s on components.

WS-1X Showerheads (Figure 20)

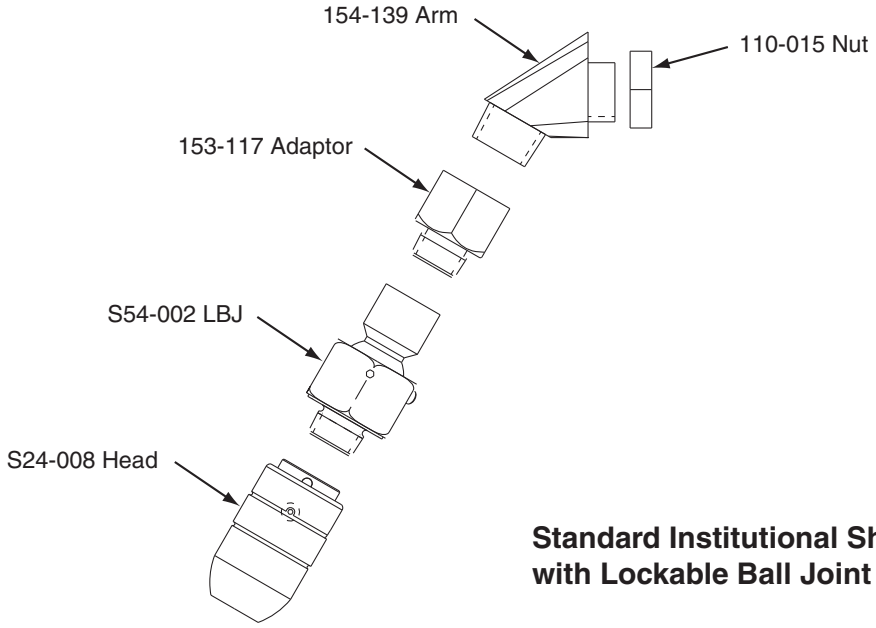
*** Add suffix G for 1.5 GPM Flow Restrictor (Example: S24-173G)**



WS-1X Basic Showerhead S24-172



Standard Institutional Showerhead S24-173 *



Standard Institutional Showerhead with Lockable Ball Joint S24-174 *

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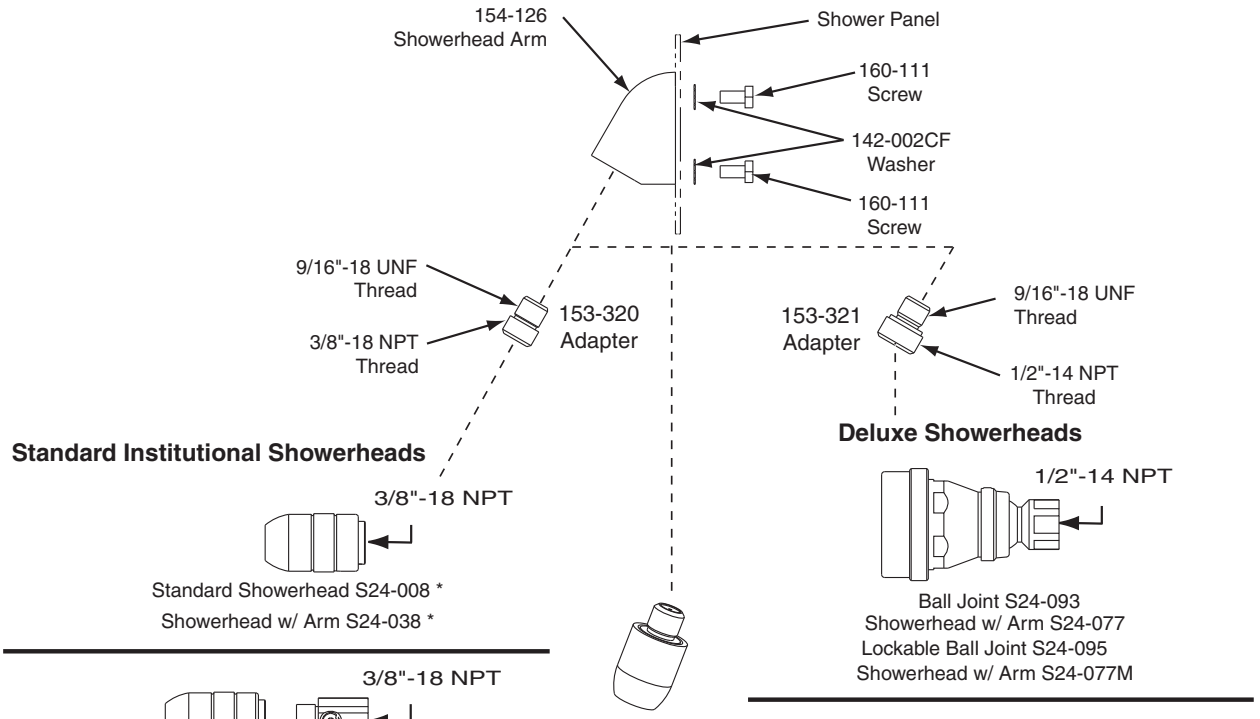
Showerheads (Figure 21)

Bradley Showers

1WCA, Econowall (2W and 3W), 1F, 1K and Panelons



Standard Showerhead S24-008 *
Showerhead w/ Arm S24-038 *

Ball Joint S24-093
Showerhead w/ Arm S24-077
Lockable Ball Joint S24-095
Showerhead w/ Arm S24-077M

S24-008 S02-058
Allen Key Volume Control S24-111 *
Showerhead w/ Arm S24-040 *

SX Showerhead
S24-161 *
Showerhead w/ Arm S24-086 *

Fixed direction spray pattern is adjustable only through orifice with 1/8" Allen Key

Allen Key Volume Control Ball Joint S24-099
Showerhead w/ Arm S24-159
Allen Key Volume Control Lockable Ball Joint S24-101
Showerhead w/ Arm S24-160

S24-008 S02-057
Lever Handle Volume Control S24-112 *
Showerhead w/ Arm S24-039 *

Lever Handle Volume Control Ball Joint S24-096
Showerhead w/ Arm S24-077D
Lever Handle Volume Control Lockable Ball Joint S24-098
Showerhead w/ Arm S24-163

S24-008 S54-002
Lockable Ball Joint Assembly S24-108 *
Showerhead w/ Arm S24-116 *

Economy Soft Flow With Ball Joint 269-919
Showerhead w/ Arm S24-162

S24-008 S54-002 S02-058
Lockable Ball Joint Assembly With Allen Key Volume Control S24-109 *
Showerhead w/ Arm S24-118 *

S24-008 S54-002 S02-057
Lockable Ball Joint Assembly With Lever Handle Volume Control S24-110 *
Showerhead w/ Arm S24-120 *

*** Add suffix G for 1.5 GPM Flow Restrictor**
(Example: S24-038G)

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Compression Valve With Lever Handle – Hot, Cold or Tempered

For Individual, Econo-Walls, Wall Savers, Panelons and Column Showers

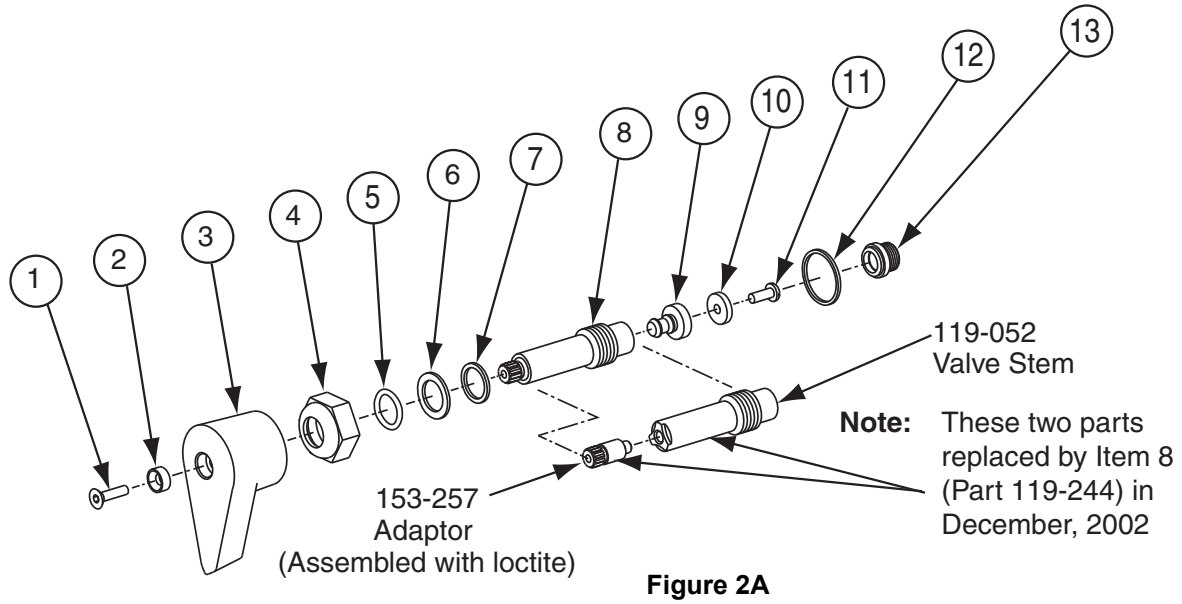

Figure 2A

Parts List

Item	Part No.	Description	Assembly S02-031C	Valve Stem Assembly S21-070	Valve Stem Extension S21-021	Repair Parts Kit S45-048A
			Qty			
1	160-225	Screw	1	—	—	—
2	153-163	Insert	1	—	—	—
3	128-050	Handle	1	—	—	—
4	121-012	Bonnet	1	—	—	—
5	125-001BC	O-Ring	1	—	—	1
6	124-001BD	Fiber Washer	1	—	—	1
7	142-002BF	Brass Washer	1	—	—	—
8	119-244	Valve Stem - Single Lever	1	1	—	—
9	120-017	Valve Stem Extension	1	1	1	1
10	125-001L	Bibb Washer	1	1	1	1
11	160-245	Screw	1	1	1	1
12	124-001K	Fiber Washer for Valve Body	—	—	—	1
13	117-002	Valve Seat-H & C	—	—	—	1

NOTE: It is not recommended that the component of the stem assemblies be ordered individually. It is likely that valve stem extension can not be removed without breaking as it is made of Celcon plastic. If breakage occurs, that portion of the plastic remaining in valve stem no. 119-244 will have to be drilled out. It is our recommendation that valve stem assembly no. S21-070 always be replaced complete.

Used in Conjunction With the Following Existing Parts:

118-009 Valve Body
150-004 Escutcheon, Columns
150-035 Escutcheon, Wall Savers, Panelons

* Use 3/8" Allen Wrench to remove valve seat

NOTE: Older style columns may require a special bushing for the seat: 153-126

Compression Valve With Lever Handle – Hot, Cold or Tempered

How they Work: Refer to Figure 2A.
Counter-clockwise rotation of the handle and valve stem causes the bibb washer to move away from the valve seat allowing water to flow through the valve seat.

Troubleshooting

PROBLEM	*CAUSE*	*SOLUTION*
Water drips from shower head.	Worn bibb washer Mineral or foreign material build up on valve seat.	Replace bibb washer Clean or replace valve seat
Water drips from handle or bonnet.	O-Ring worn or bonnet insufficiently tightened.	Replace O-Ring or tighten bonnet.
Water will not shut off.	Bibb washer retaining screw worked loose resulting in washer not seating properly.	Tighten or replace washer retaining screw.

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Compression Valve, Current Style – Hot, Cold or Tempered

For Individual, Econo-Walls, Wall Savers, Panelons and Column Showers

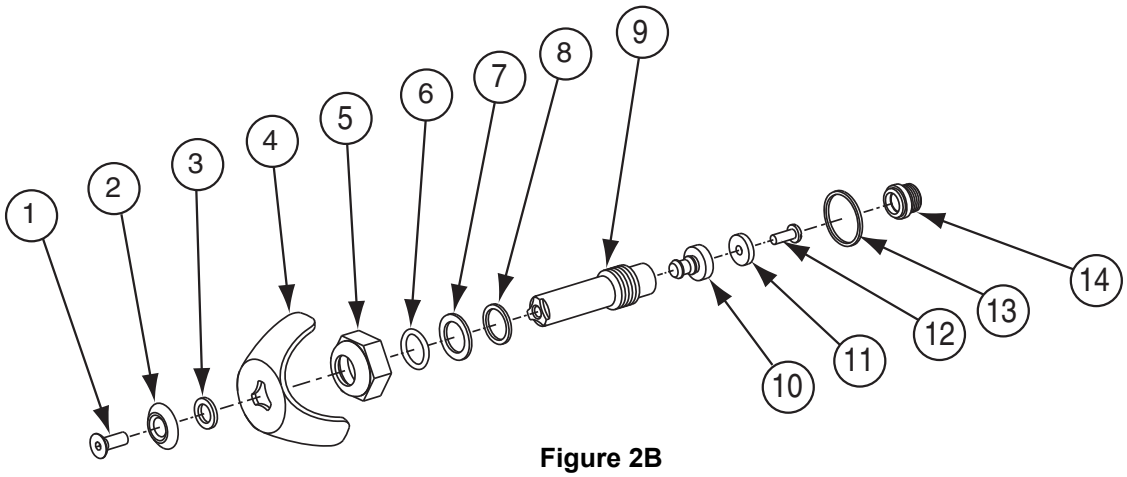

Figure 2B

Parts List

Item	Part No.	Description	Assembly S02-031	Valve Stem Assembly S21-020	Valve Stem Extension S21-021	Repair Parts Kit S45-048A
			Qty			
1	160-145	Screw	1	—	—	—
2	142-027	Index Washer (White)	1	—	—	—
2	142-027A	Index Washer (Blue)	1	—	—	—
2	142-027B	Index Washer (Red)	1	—	—	—
3	142-002BL	Insert Washer	1	—	—	—
4	128-028	Handle	1	—	—	—
5	121-012	Bonnet	1	—	—	—
6	125-001BC	O-Ring	1	—	—	1
7	124-001BD	Fiber Washer	1	—	—	1
8	142-002BF	Brass Washer	1	—	—	—
9	119-052	Valve Stem	1	1	—	—
10	120-017	Valve Stem Extension	1	1	1	1
11	125-001L	Bibb Washer	1	1	1	1
12	160-245	Screw	1	1	1	1
13	124-001K	Fiber Washer for Valve body	—	—	—	1
*14	117-002	Valve Seat-H & C	—	—	—	1

NOTE: It is not recommended that the component of the stem assemblies be ordered individually . It is likely that valve stem extension can not be removed without breaking as it is made of Celcon plastic. If breakage occurs, that portion of the plastic remaining in valve stem no. 1 19-052 will have to be drilled out. It is our recommendation that valve stem assembly no. S21-020 always be replaced complete.

Used in Conjunction With the Following Existing Parts:

118-009 Valve Body
150-004 Escutcheon, Columns
150-035 Escutcheon, Wall Savers, Panelons

* Use 3/8" Allen Wrench to remove valve seat

NOTE: Older style columns may require a special bushing for the seat: 153-126

S02-031 Complete valve stem and handle assembly with White Index Washer (Tempered).

S02-031A Complete valve stem and handle assembly with Blue Index Washer (Cold).

S02-031B Complete valve stem and handle assembly with Red Index Washer (Hot)

Compression Valve, Current Style – Hot, Cold or Tempered

How they Work: Refer to Figure 2B.
Counter-clockwise rotation of the handle and valve stem causes the bibb washer to move away from the valve seat allowing water to flow through the valve seat.

Troubleshooting

PROBLEM	*CAUSE*	*SOLUTION*
Water drips from shower head.	Worn bibb washer Mineral or foreign material build up on valve seat.	Replace bibb washer Clean or replace valve seat
Water drips from handle or bonnet.	O-Ring worn or bonnet insufficiently tightened.	Replace O-Ring or tighten bonnet.
Water will not shut off.	Bibb washer retaining screw worked loose resulting in washer not seating properly.	Tighten or replace washer retaining screw.

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1C Single Compression Valve with Lever Handle

For Built-in, Concealed Supply Application

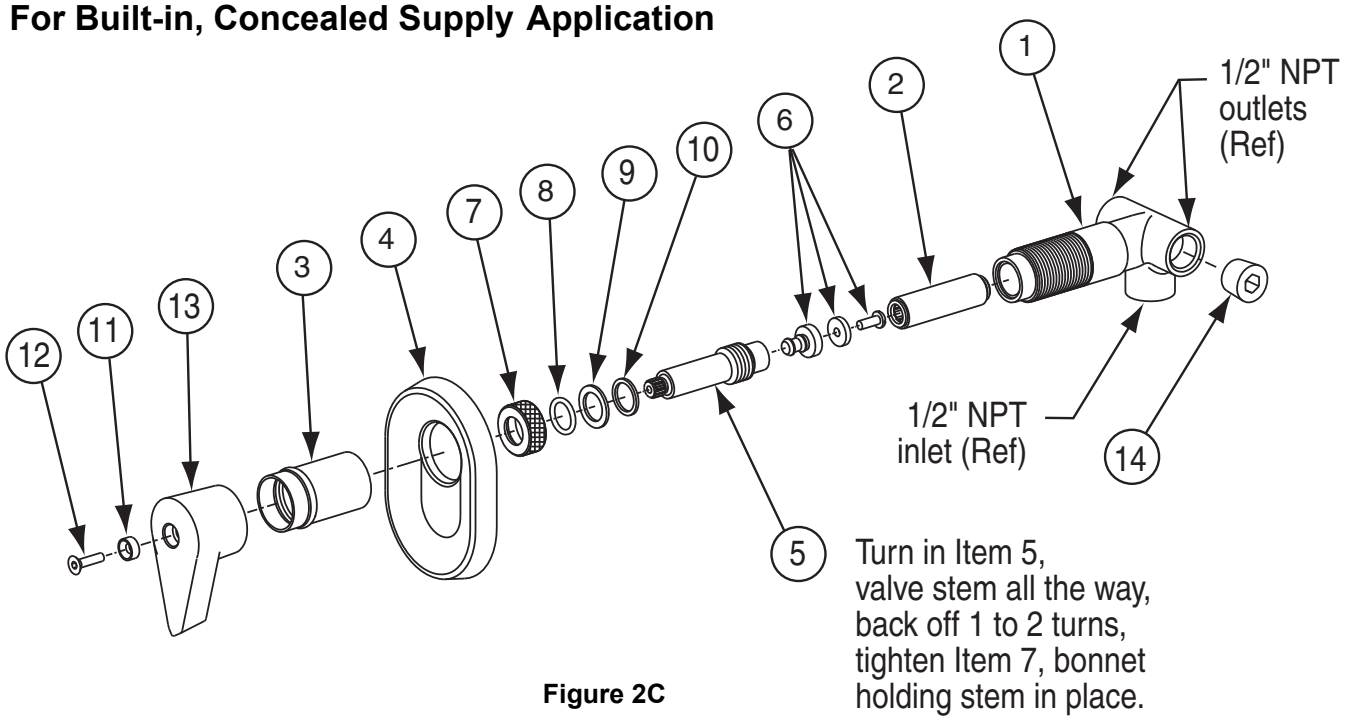


Figure 2C

Parts List

Item	Part No.	Description	Assembly S67-507 Qty	Valve Stem Assembly S21-070 Qty
1	118-146A	Mix Chamber	1	—
2	117-034	Valve Seat	1	—
3	113-430	Escutcheon Sleeve H & C	1	—
4	150-110	Escutcheon	1	—
5	119-244	Valve Stem - Lever Handle	1	1
6	S21-021	Valve Stem Ext Comp	1	1
7	121-019	Bonnet	1	—
8	125-001BC	O-Ring .818" OD	1	—
9	124-001BD	Flat Washer .641 x .938 x .063	1	—
10	142-002BF	Flat Washer .641 x .813 x .063	1	—
11	153-163	Diverter Valve Insert	1	—
12	160-225	Screw 10-24 x 3/4 FL	1	—
13	128-050	Handle	1	—
14	169-168	Pipe Plug - 1/2" Brass	1	—

NOTE: It is not recommended that the component of the stem assemblies be ordered individually . It is likely that valve stem extension can not be removed without breaking as it is made of Celcon plastic. If breakage occurs, that portion of the plastic remaining in valve stem no. 1 19-244 will have to be drilled out. It is our recommendation that valve stem assembly no. S21-070 always be replaced complete.

1C Single Compression Valve with Lever Handle

How they Work: Refer to Figure 2C.

Counter-clockwise rotation of the handle and valve stem causes the bibb washer to move away from the valve seat allowing water to flow through the valve seat.

Troubleshooting

PROBLEM	*CAUSE*	*SOLUTION*
Water drips from shower head.	Worn bibb washer Mineral or foreign material build up on valve seat.	Replace bibb washer Clean or replace valve seat
Water drips from handle or bonnet.	O-Ring worn or bonnet insufficiently tightened.	Replace O-Ring or tighten bonnet.
Water will not shut off.	Bibb washer retaining screw worked loose resulting in washer not seating properly.	Tighten or replace washer retaining screw.

1C Single Compression Valve

For Built-in, Concealed Supply Application

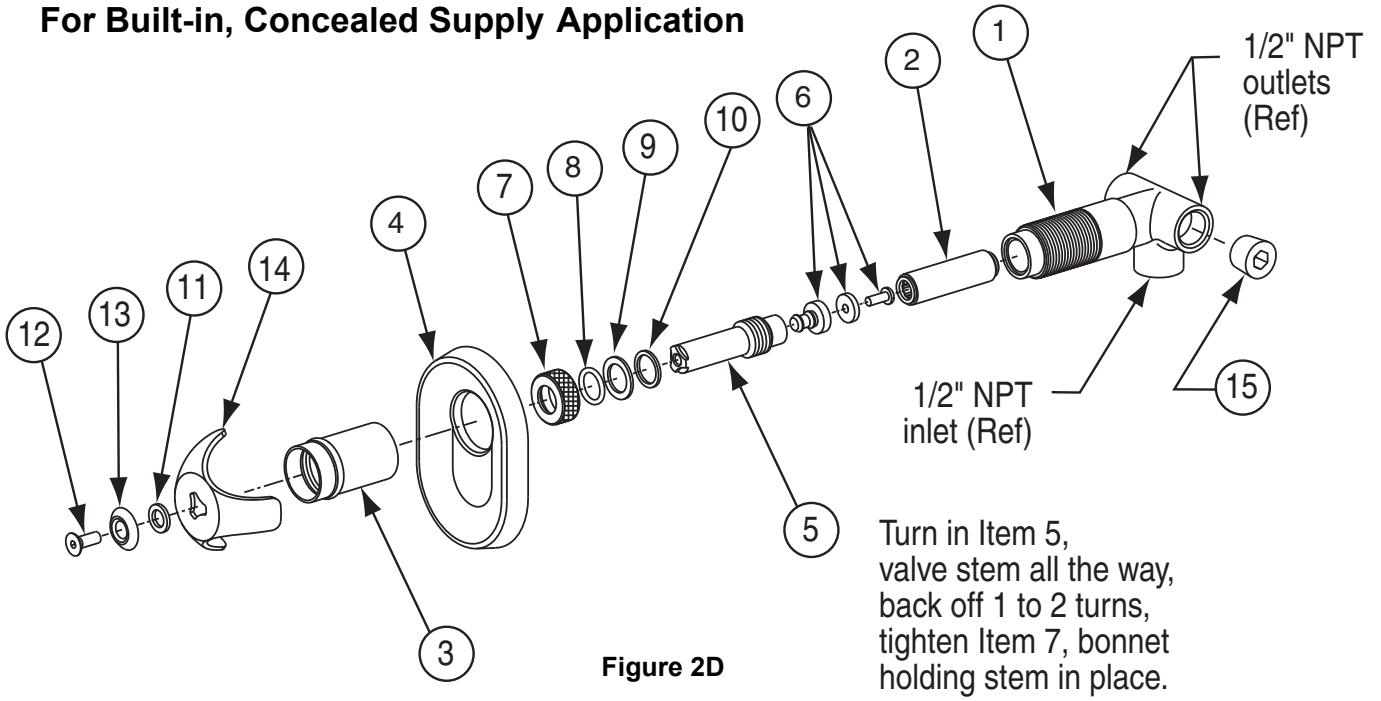


Figure 2D

Parts List

Item	Part No.	Description	Assembly S67-379	Valve Stem Assembly S21-020
			Qty	
1	118-146A	Mix Chamber	1	—
2	117-034	Valve Seat	1	—
3	113-430	Escutcheon Sleeve H & C	1	—
4	150-110	Escutcheon	1	—
5	119-052	Valve Stem - H & C	1	1
6	S21-021	Valve Stem Ext Comp	1	1
7	121-019	Bonnet	1	—
8	125-001BC	O-Ring .818" OD	1	—
9	124-001BD	Flat Washer .641 x .938 x .063	1	—
10	142-002BF	Flat Washer .641 x .813 x .063	1	—
11	142-002BL	Washer .391 x .625 x .078	1	—
12	160-145	Screw 1/4-28 x 1/2 FL	1	—
13	142-027	Washer - Index - White	1	—
14	128-057	Handle - Polished	1	—
15	169-168	Pipe Plug - 1/2" Brass	1	—

NOTE: It is not recommended that the component of the stem assemblies be ordered individually . It is likely that valve stem extension can not be removed without breaking as it is made of Celcon plastic. If breakage occurs, that portion of the plastic remaining in valve stem no. 1 19-052 will have to be drilled out. It is our recommendation that valve stem assembly no. S21-020 always be replaced complete.

1C Single Compression Valve

How they Work: Refer to Figure 2D.

Counter-clockwise rotation of the handle and valve stem causes the bibb washer to move away from the valve seat allowing water to flow through the valve seat.

Troubleshooting

PROBLEM	*CAUSE*	*SOLUTION*
Water drips from shower head.	Worn bibb washer Mineral or foreign material build up on valve seat.	Replace bibb washer Clean or replace valve seat
Water drips from handle or bonnet.	O-Ring worn or bonnet insufficiently tightened.	Replace O-Ring or tighten bonnet.
Water will not shut off.	Bibb washer retaining screw worked loose resulting in washer not seating properly.	Tighten or replace washer retaining screw.

Solenoid Valves (Figure 24)

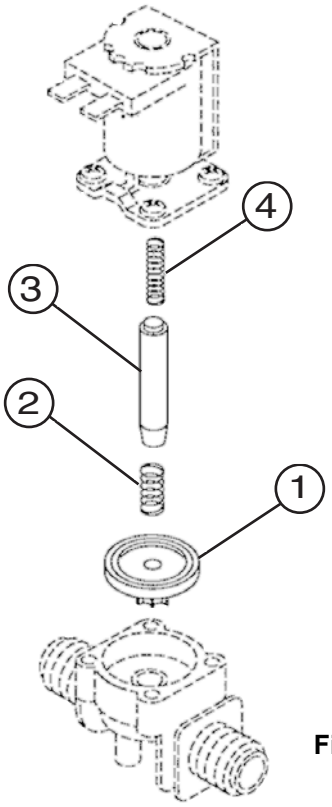


Figure 24a

Coverall and Column Solenoid Valves

S07-050 Muller Valve Assembly (Figure 24a)

Item	Description	Repair Kit S65-123 Qty
1	Membrane	1
2	Membrane Pressure Spring	1
3	Plunger	1
4	Pressure Spring (Plunger)	1

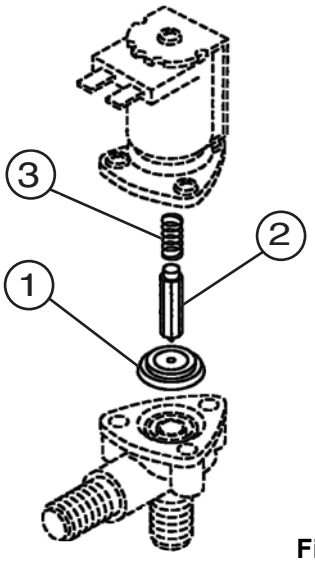


Figure 24b

All Other Shower Solenoid Valves

269-719 Eaton Valve Assembly (Figure 24b)

Item	Part No.	Description	Repair Kit S65-113 Qty
1	269-983	Diaphragm	1
2	269-577	Armature	1
3	269-578	Spring	1

Touch 'N Flo Shower Valve, Current Version (Figure 25)

For Individual, Econo-Walls, Wall Savers, Panelons and Column Showers

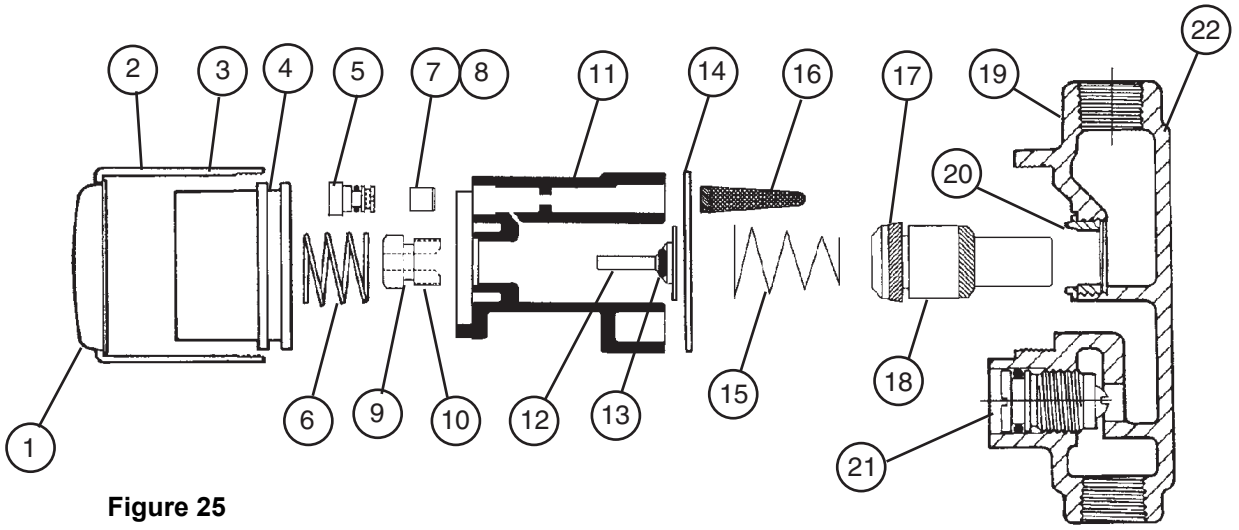


Figure 25

*** Note:**
Item #10 includes 125-001BF O-Ring
Item #12 includes 125-001EF O-Ring
Item #18 includes 125-049 Cup Washer

May consider plunger assembly S64-087 if extreme low water pressure condition exist s.

NOTE: Lubricate "U" cup (Item 17) on plunger with Parker "O" Lube (S45-125). Apply thin coat all around I.D. - 1" deep. Do not use spray silicone or petroleum based lubricant s on components.

Escutcheon & Screws (Not Shown) must be ordered sep arately as follows:

150-033	Escutcheon 6-Person Column Shower
150-031	Escutcheon 2-5 Person Column Shower
160-165	Escutcheon Screw — 1 required
150-077	Escutcheon for all other Showers
160-255	Escutcheon Screw — 2 required
159-107	Wall Plate for Individual Shower
160-290	Wall Plate Screw — 2 required

Touch 'N Flo Shower Valve Parts List, Current Version (Figure 25)

Item	Part No.	Description	Assembly	Complete Valve Kit ❶ S45-320	Body Ass'y Kit S73-019S	Repair Kit S65-071	Repair Kit S65-070
			Qty				
1	128-048	Push Button	1	1	—	—	—
2	107-243	Cover 1-5/8" Long	1	1	—	—	—
3	107-253	Cover (Indiv. only) 2-3/4" Long	1	—	—	—	—
4	182-065	Spacer (Indiv. only)	1	—	—	—	—
5	S21-032	Screw Ass'y	1	1❷	1❷	1❷	—
6	135-034	Spring	1	1	—	—	—
7	S88-039	Standard Fixed Orifice Ass'y	1	1❷	1❷	1❷	1
8	S88-039B	Longer Cycle Orifice Ass'y	1	—	—	—	—
9	125-001BF	O-Ring	1	—	—	—	—
10	S68-005*	Guide	1	1❷	1❷	1❷	—
11	118-210	Body	1	1❷	1❷	1❷	—
12	S64-034*	Poppet Ass'y	1	1	1	1	—
13	125-001EF	O-Ring	1	—	—	—	1
14	169-250	Gasket	1	—	—	—	1
15	135-028	Conical Spring	1	1	—	1	1
16	173-012	Filter	1	1❷	1❷	1❷	1
17	125-078	U-Cup (Viton, Brown)	1	—	—	—	—
18	S64-088	Plunger Ass'y	1	1		1	1
19	118-121	Bottom Body	1	—	—	—	—
20	117-030	Seat (Assemble with Teflon Dope)	1	—	—		
21	S27-070	Internal Stop Core	1			—	—
22	S27-180*	Bottom Body Ass'y	—	—	—	—	—
	S45-125	Parker "O" Lube	1	—	1	1	1
	215-717	Instruction Sheet	—	1	—	—	—

NOTE: Lubricate "U" cup (Item 17) on plunger with Parker "O" Lube (S45-125). Apply thin coat all around I.D. - 1" deep. Do not use spray silicone or petroleum based lubricant s on components.

NOTE: ❶ Repair kit S45-320 applies to the "Short Cover" valve version only .
❷ These components part of assembly S73-046.

Touch 'N Flo Shower Valve, Current Version (Figure 25)

For Individual, Econo-Walls, Wall Savers, Panelons and Column Showers

Note: Refer to Illustration and parts list on previous pages.

Valve Timing

Note: Current style valve is supplied with Fixed Orifice Timing Assembly. There is no need to adjust this valve for timing. If previous version style of adjustable orifice is desired, parts are available. Consult factory.

Current valve furnished from March of 1988 is equipped with fixed timing orifice assembly (S88-039). This will time the valve to approximately 25 to 45 seconds. If a shorter cycle is desired, use S88-039A, or if longer cycle is desired, use S88-039C. If servicing previous version of valve with adjustable timing orifice, follow instructions below. It would be desirable, however, to replace both orifice and O-Ring in valve body with Fixed Orifice Assembly.

1. Remove escutcheon.
2. Remove cover (Items 2 or 3).

Note: The pushbutton, and spring will also come loose with the cover.

3. Check present timing by depressing poppet (Item 12). Measure the time from poppet release to valve shutoff.
4. Changing timing:
   A. Insert 3/32"Allen Key into screw (Item 5).
   B. Turn clockwise to lengthen time valve is open.
   C. Turn counterclockwise to shorten time valve is open.
   D. Recheck timing by as indicated in Step 3, continuing adjustment until desired timing is reached.

Note: A short turn will change timing considerably when setting valve in excess of 45 seconds.

5. Replace cover and related parts.
6. Retest timing by depressing push button (Item 1). If timing is significantly different than in Step 4D, repeat Step 2 or follow note above referring to Fixed Orifice Assembly.

If Valve Will Not Shut Off

1. Remove escutcheon.
2. Remove cover (Items 2 or 3).

Note: The pushbutton, and spring will also come loose with the cover.

3. Using a 3/32" Allen Key, turn adjusting screw (Item 5) counterclockwise until adjusting screw is flush with body (Item 11). If valve continues to run, proceed with the next step.
4. Turn integral stop (Item 21) to shut off water, remove body assembly (Item 11) and check for:
   A. A loose or worn valve seat (Item 20).
   B. Any obstruction between seat and plunger assembly.
   C. Loose, missing or plugged filter (Item 16), in body assembly. If either condition exists, replace entire body assembly (S73-019S).

Touch 'N Flo Valve Service Procedures (Figure 25)... *(Continued)*

D. Missing plunger assembly (Item 18). Conical washer worn on not centered on plunger assembly. Replace if either condition exists.

E. Reassemble valve body assembly S73-019S and turn water on.

F. If valve still continues to run, proceed with Step 5.

5. Shut off water to shower, remove integral stop (Item 21), and check if bibb washer and screw have become disassembled and have remained in passageway or if any other foreign matter may be obstructing water flow. If integral stop core is defective, replace with a new unit, reassemble and test.

If Valve Will Not Turn On

1. Check if all stops are open.
2. Integral stop washer may have slipped off retaining screw, allowing it to obstruct passageway. Remove washer and replace integral stop (Item 21) with new unit.
3. Poppet guide (Item 10) may be screwed into body (Item 11) too tightly, this applies to older versions only. On current style, seal is made from poppet guide O-Ring 125-001BF to body, and poppet assembly to guide with 125-001DB O-Ring integral to poppet.
4. Conical piston spring (Item 15) may be in upside down. Narrow end of spring should engage the piston.

If Valve Timing is Unstable at Cycles In Excess of One Minute

1. Make certain to depress pushbutton (Item1) and hold for one second to test cycle.
2. Listen to shower for evidence of strong flowing fluctuations. If these exist when other showerheads are used, check building supply stops for full open, check if strainers are clean and tempering valves are on.
3. If timing drifts steadily longer or shorter, check to see what style of orifice is used (see note on previous page regarding type of orifice utilized). If adjustable orifice is used, it is advisable to select a fixed orifice assembly. If using a fixed orifice, remove and hold up to light to see if passageway is clear for small amount of water to pass. Replace in cavity with O-Ring side first.

TouchTime® (Figure 26)

Item	Part No.	Description	Qty
1	110-115	Nut	1
2	S83-128	Switch Assembly - 60 Second	1
2	S83-128F	Switch Assembly - 180 Second	
3	159-354	Escutcheon	1
4	204-465	Decal (on face of escutcheon)	1

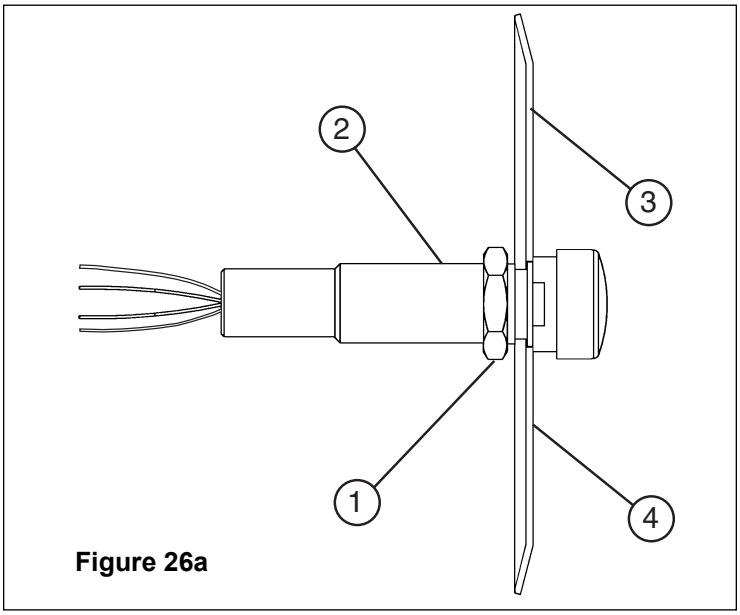


Figure 26a

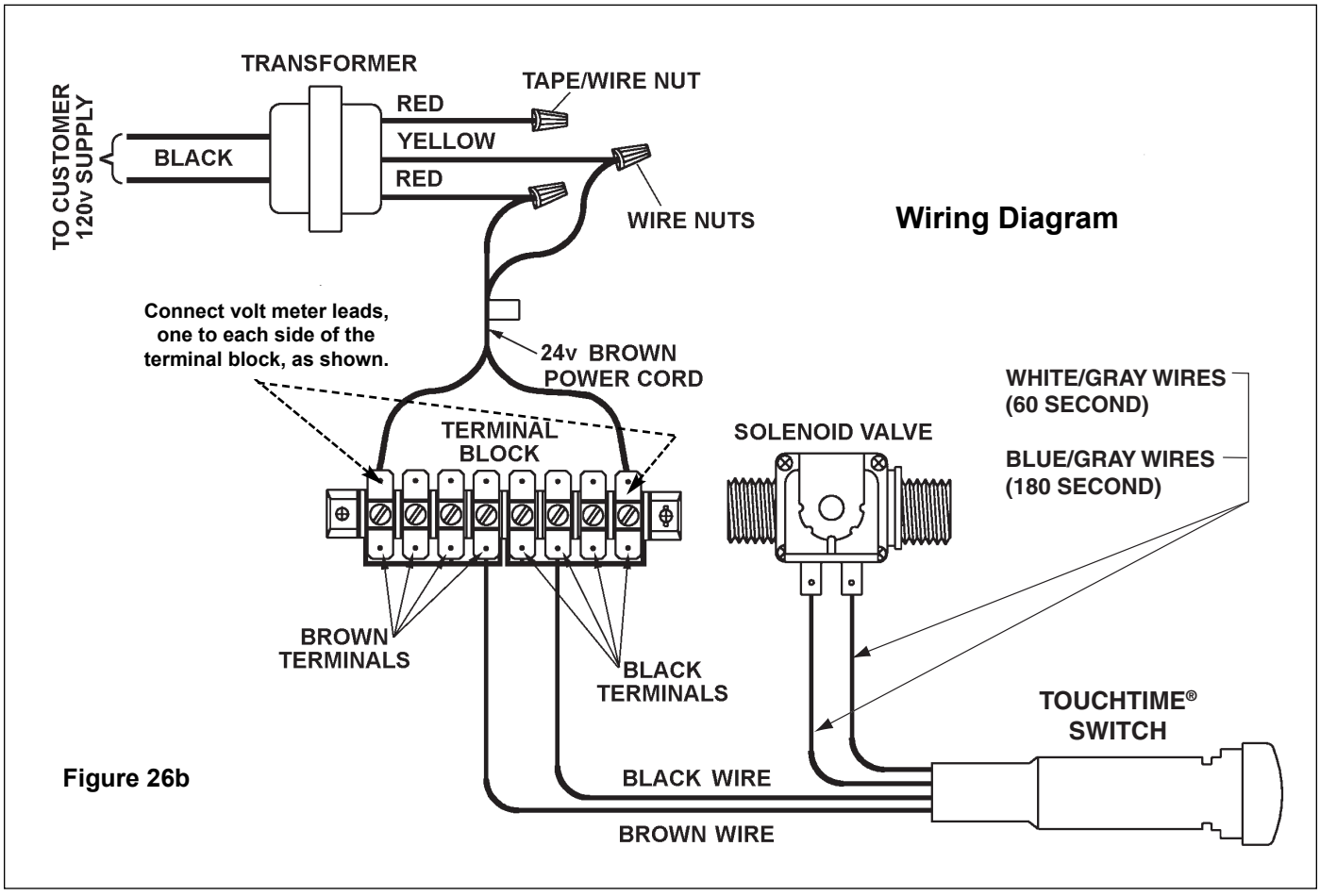


Figure 26b

Servicing TouchTime® Push Button Unit (Figure 26)

If the TouchTime® push button unit does not function properly

1. Make sure the water supply and the 24 VAC power are both turned on.

   If the water supply and the electrical power are both turned on but the push button is still not functioning, check the wiring following the steps outlined in procedure #2 below.

2. Check the wiring following the procedure outlined below:
   a. Turn the electrical power off.
   b. Check the wiring for loose connections or corrosion and correct if necessary.
   c. Turn the electrical power back on and retest the push button.

   If, after checking the wiring, the push button is still not functioning properly, test the transformer following the steps outlined in procedure #3.

3. Test the transformer with a volt meter following the procedure outlined below:
   a. Turn the water supply off (the electrical power should remain on).
   b. Set the volt meter scale to be able to read “24 VAC”.
   c. Connect the volt meter leads to the terminal block (one on each side) as shown in Figure 26.
   d. The voltage reading should indicate 24 VAC ± 10%.

   If you are unable to obtain a proper voltage reading, the transformer is not working properly and needs to be replaced. Contact your Bradley representative to order a replacement transformer (ask for Bradley part number 269-703A).

   If the transformer is working properly, turn the water supply back on and test the solenoid following the steps outlined in procedure #4.

4. Test the solenoid valve following the procedure outlined below:
   a. Disconnect the White/Gray wires (60 second) or Blue/Gray wires (180 second) from the solenoid.
   b. Disconnect the brown power cord leads from the terminal block.
   c. Connect the brown power cord leads directly to the solenoid. The solenoid coil should activate and you should hear a single click and a humming noise.

   If the solenoid coil does not activate, the solenoid valve is not working properly and needs to be replaced. Contact your Bradley representative to order a replacement solenoid valve assembly (ask for Bradley part number S07-053).

   If, after checking the transformer, the solenoid valve and the wiring, you are unable to activate the shower sprayhead by pressing the TouchTime® push button, the TouchTime® switch assembly is not working properly and needs to be replaced. Contact your Bradley representative to order a replacement switch assembly (ask for Bradley part number S83-139).

Touch Time™ with Battery Operation (Figure 33)

1. Insert one CRP2 6-volt lithium battery into each battery holder.
2. Connect the wires as shown in Figure 33.
3. Push the buttons on each of the stations to ensure that the valve is in the “closed” position.
4. Turn the water supply back on and check for leaks.
5. Push the buttons on each of the stations to flush the air out of the system and verify that the buttons correspond.

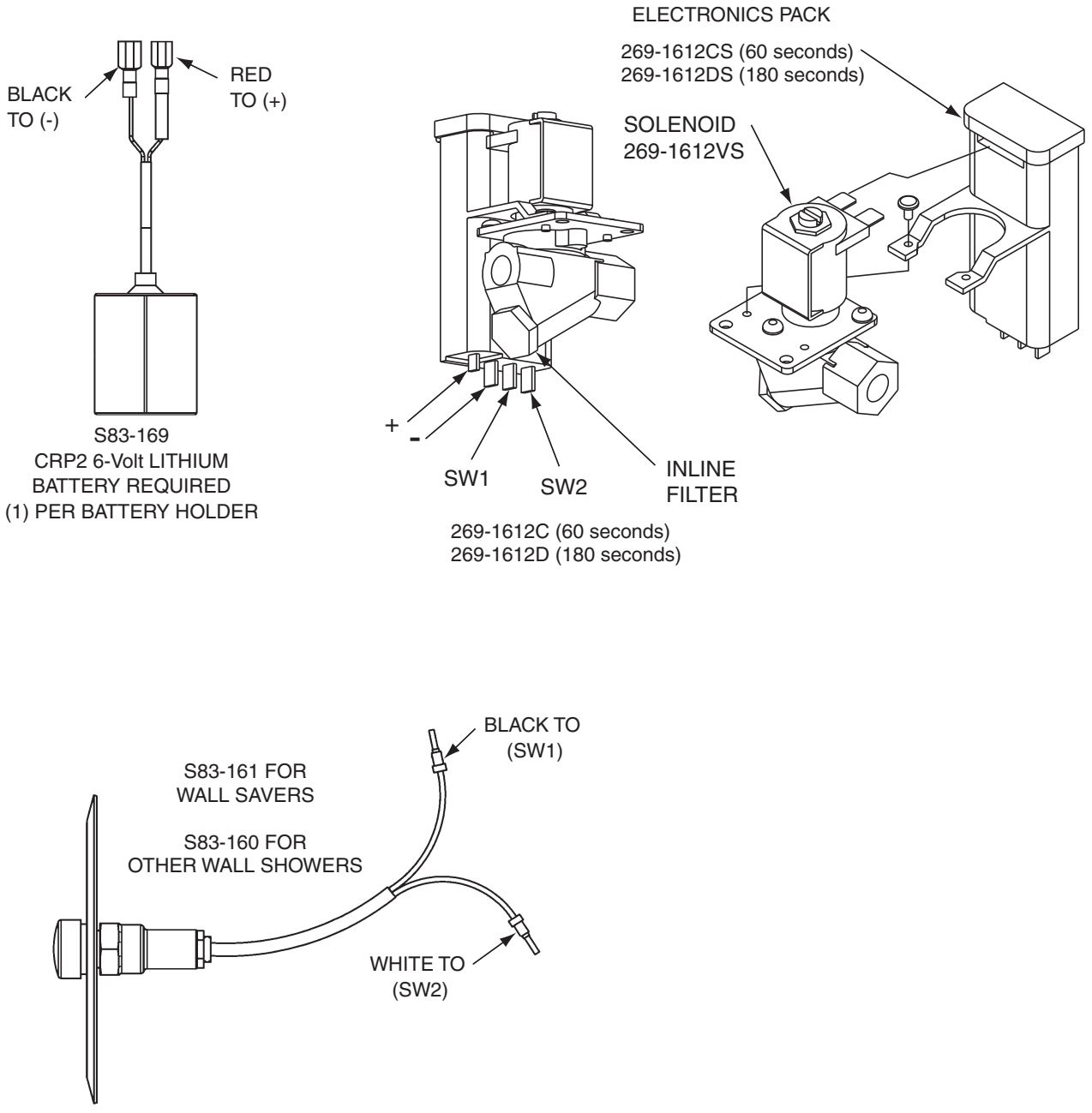


Figure 33

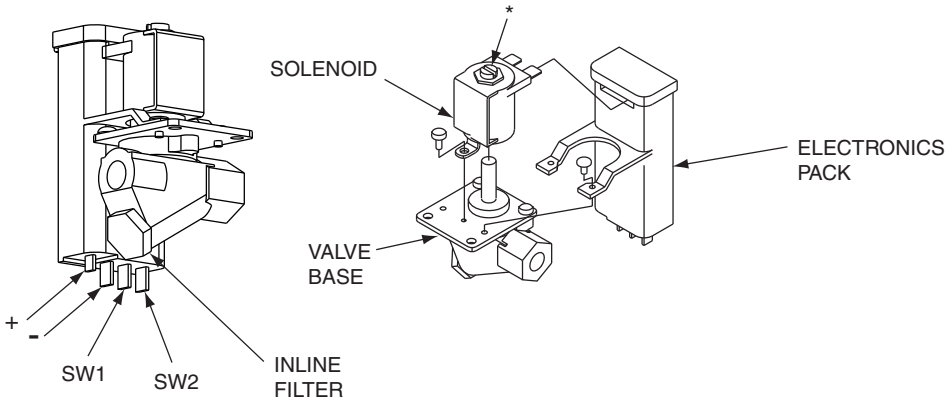
Battery Touch Time Troubleshooting (Figure 33)

Troubleshooting
— Flush supply line before making connections —

PROBLEM	*SOLUTION*
No Water coming out at all	1. Hold button in for minium 1 second, then release. 2. Check battery and connections for loose connections or corrosion, and battery for low voltage — Correct as needed. 3. Disconnect switch connectors. Jumper accross switch SW2 to SW1 on valve for minium 1 second. — Remove jumper. If valve activates — Replace or service the switch. 4. Check inline filter in valve — Clean if required. 5. Remove the electronics pack. — Connect the power to the solenoid directly.— Reversing the power connections will close the solenoid. — If the solenoid is OK, replace the electronics pack — If the solenoid is bad, replace the valve assembly.
If Low or No Flow (and you can hear solenoid click/working).	1. Check battery and connections for loose connections or corrosion, and battery for low voltage — Correct as needed. 2. Check inline filter in valve — Clean if required. 3. Remove shower/spray head and clean.
Water flows only short time length.	1. Check battery and connections for loose connections or corrosion, and battery for low voltage — Correct as needed. 2. Check timing printed on valve. 3. Replace electronics pack of valve.
Water does not shut off.	1. Check battery and connections for loose connections or corrosion, and battery for low voltage — Corrcct as needed. 2. Check inline filter in valve — Clean if required. 3. Check timing printed on valve. 4. Remove the electronics pack.— Connect the power to the solenoid directly. — Reversing the power connections will close the solenoid. — If the solenoid is OK, replace the electronics pack — If the solenoid is bad, replace the valve assembly.
If battery has too short of a life.	1. Check battery holder, wires and connections for corroision or damage. 2. Replace electronics pack of valve.

1. If the solenoid is removed from the valve assembly for ease of service of the electronic pack, the solenoid must return to its orginal valve base.
2. If the Power - Battery is removed from the unit, the valve will remain in which ever position it was in (open or closed). If open, reconnecting power will let the timer continue until the timer closes the valve. There is no way to change or reset the timer.

* **Warning:** Do not turn screw and/or nut on the top end of the solenoid. This is a precision adjustment made at the factory.



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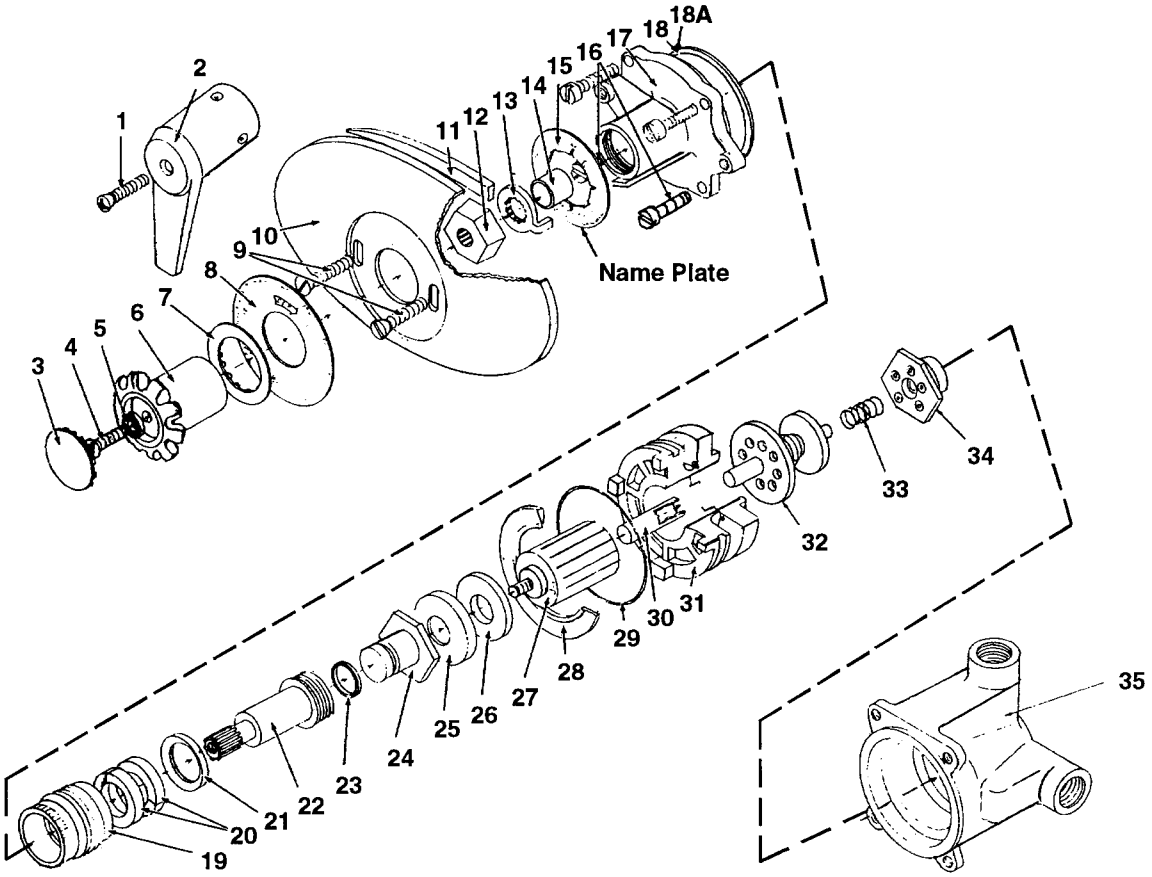
Bradley Shower Warranty Information

Product warranties may be found under “Product Information” on our website at www .bradleycorp.com

Bradley Thermostatic Mixing Valve (Figure 2)

Repair parts are no longer available from Bradley. Contact Powers,a Watts Industries co., their model 425 Hydroguard.



No.	Description	No.	Description	No.	Description	No.	Description
1	Screw	10	Dial Plate	18A	Bonnet O-Ring	27	Thermal Motor
2	Lever Handle Assembly	11	Gasket	19	Packing Gland	28	Spacer Ring
3	Plug Button	12	Handle Adaptor	20	Packing Rings	29	Combination Seat O-Ring
4	Screw	13	Temperature Stop	21	Packing Stop Ring	30	Motor Sleeve
5	Washer	14	Spacer Sleeve	22	Adjustable Stem	31	Combination Seat
6	Handle	15	Identification Tag	23	Motor Quad Ring	32	Valve Assembly
7	Retainer	16	Screws	24	Shut-Off Disc Nut	33	Valve Return Spring
8	Dial Insert	17	Bonnet	25	Shut-Off Disc Retainer	34	Hot Water Seat
9	Screw	18	Bonnet Gasket	26	Shut-Off Disc	35	Body Port

Figures courtesy of Powers, a Watts Industries Co.

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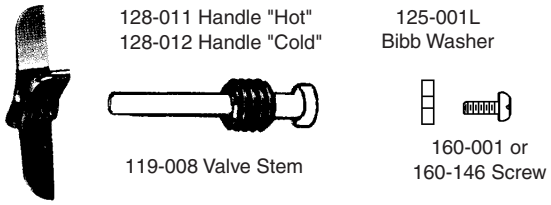
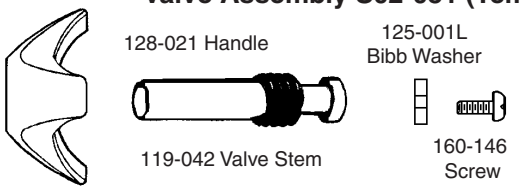
Compression Shower Valves 1049 to Present (Figure 27)

NOTE: Complete valve assemblies are not shown. Only those parts reflecting basic design changes are illustrated.



VALVE ASSEMBLY NO. S02-018
Furnished from 1949 to 1963.
Only the 125-001L & 160-146 are still available.

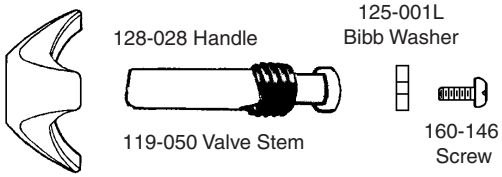
Valve Assembly S02-031 (Tempered), S0-2031A (Cold), S02-031B (Hot)



First S02-031 Series
Furnished from 1963 to 1968.
Only the 125-001L & 160-146 are still available.

REPAIR KIT NO. S45-048

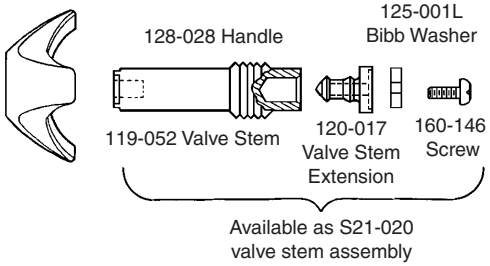
CONTENTS		
Qty	Part No.	Item
1	160-146	Screw
1	125-001L	Bibb Washer
1	124-001BD	Fibre Washer
1	125-001BC	"O" Ring
1	117-002	Renewable Valve Seat
1	124-001K	Valve Body Washer



Second S02-031 Series
Furnished from 1968 to 1969.
Only the 128-028, 125-001L & 160-146 are still available.

REPAIR KIT NO. S45-048

CONTENTS		
Qty	Part No.	Item
1	160-146	Screw
1	125-001L	Bibb Washer
1	124-001BD	Fibre Washer
1	125-001BC	"O" Ring
1	117-002	Renewable Valve Seat
1	124-001K	Valve Body Washer

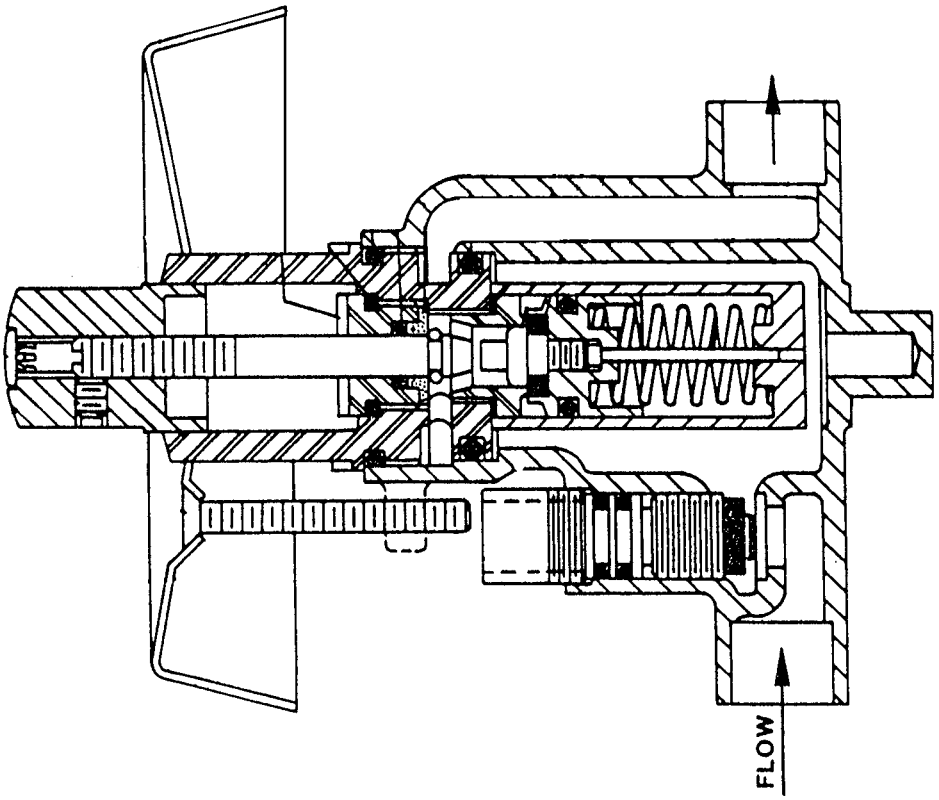


Third S02-031 Series
Furnished since 1969.
Only the third S02-031 Services can be provided complete, either as an assembly, or as individual parts.

REPAIR KIT NO. S45-048A

CONTENTS		
Qty	Part No.	Item
1	120-017	Valve Stem Extension
1	160-146	Screw
1	125-001L	Bibb Washer
1	124-001BD	Fibre Washer
1	124-001K	Washer
1	125-001BC	"O" Ring
1	117-002	Renewable Valve Seat

Metered Shower Valve S27-024 (Figure 28)



Valve Adjustment:

By referring to the valve diagram, follow these instructions for valve adjustment. The diagram shows the valve set at maximum time cycles the Allen set screw is holding on the uppermost end of push-rod. To shorten cycle:

1. Loosen the Allen set screw.
2. "Pop out" plug bottom with sharp pointed tool.
3. Insert thin blade screwdriver in center of knob and into the slot of the push-rod.
4. Turn knob clockwise while holding screwdriver firmly. Turn until push-rod is almost flush with top of knob.
5. Tighten Allen set screw. Insert plug bottom.

This procedure lowers the knob in the cap and effectively allows for shorter stroke when the knob is pushed to operated the valve.

SERVICE NOTES: Foreign matter in new pipe lines may interfere with proper operation of valve and may be corrected by removing cartridge and cleaning working parts of valve. If valve has long idle period between installation and operation, Cup Washer or Push-rod may stick and it may be necessary to disassemble valve end of cartridge and lightly lubricate these parts. The same procedure may be found necessary on installations which have only seasonal use.

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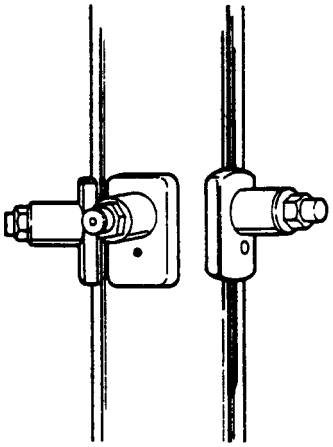
Metered Shower Valves S27-023



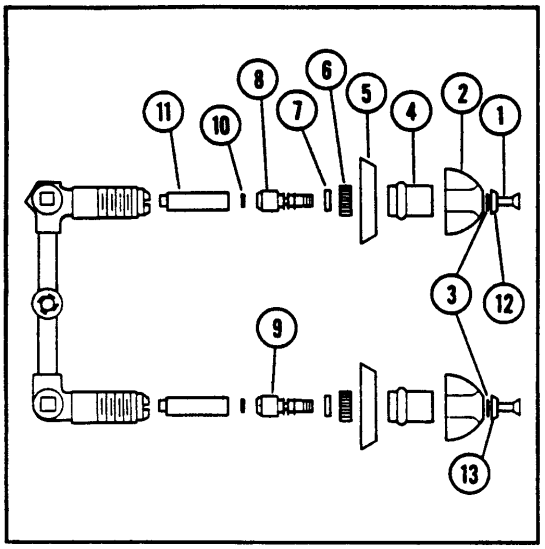
Bradley Metered Shower Valve S27-023 for column showers & repair parts is **no longer available.**

Bradley's Metering to Touch 'N Flo Conversion Kits are **No Longer Available** as well as the On-Site Machining Tool S45-347:

2 to 5 Person Column . . . . . .S45-321 (No longer availble)
6 Person Column . . . . . .S45-322 (No longer available)

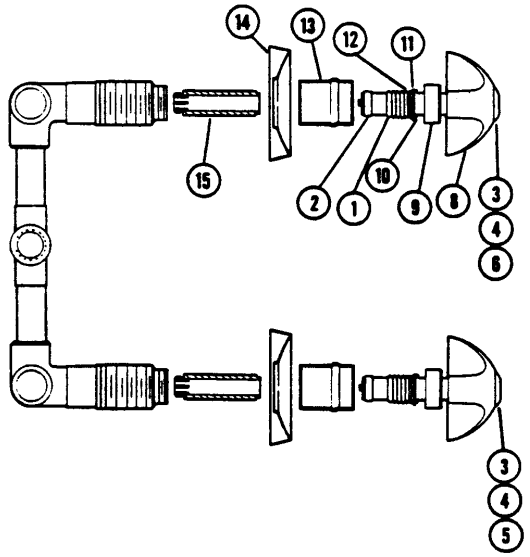
Pos-I-Pak Valves (Figure 30)

Individual Showers — Concealed
Used from January 1978 to March 1983.
Components no longer available.
Single Tempered Supply Uses Washer 142-027
And Valve Unit S27-157.



PARTS LIST		
No.	Part	Description
1	160-261	Screw
2	128-049	Handle
3	142-002BL	Washer
4	169-743	Sleeve
5	169-742	Escutcheon
6	169-650	Cap
7	125-001BC	O-Ring 13/16 x 5/8
8	S27-157	Valve Unit (Includes 169-748 & 169-746)
9	S27-157A	Valve Unit (Includes 169-748 & 169-746)
10	125-001BY	"O" - Ring 1/2 x 3/8
11	169-741	Waterway Sleeve
12	142-027A	Washer — Cold (Blue)
13	142-027B	Washer — Hot (Red)

HOT & COLD VALVES
Individual Showers — Concealed
Used from March 1983 To Present.
Single Tempered Supply Uses Washer 142-027.



PARTS LIST		
No.	Part	Description
1	119-052	Valve Stem
2	S21-021	Extension
3	142-002BL	Insert Washer
4	160-145	Screw
5	142-027B	Red Washer
6	142-027A	Blue Washer
8	128-060	Handle
9	121-019	Bonnet
10	125-001BC	"O" - Ring
11	124-001BD	Fiber Washer
12	142-002BF	Brass Washer
13	113-430	Sleeve
14	150-110	Escutcheon
15	117-034	Seat

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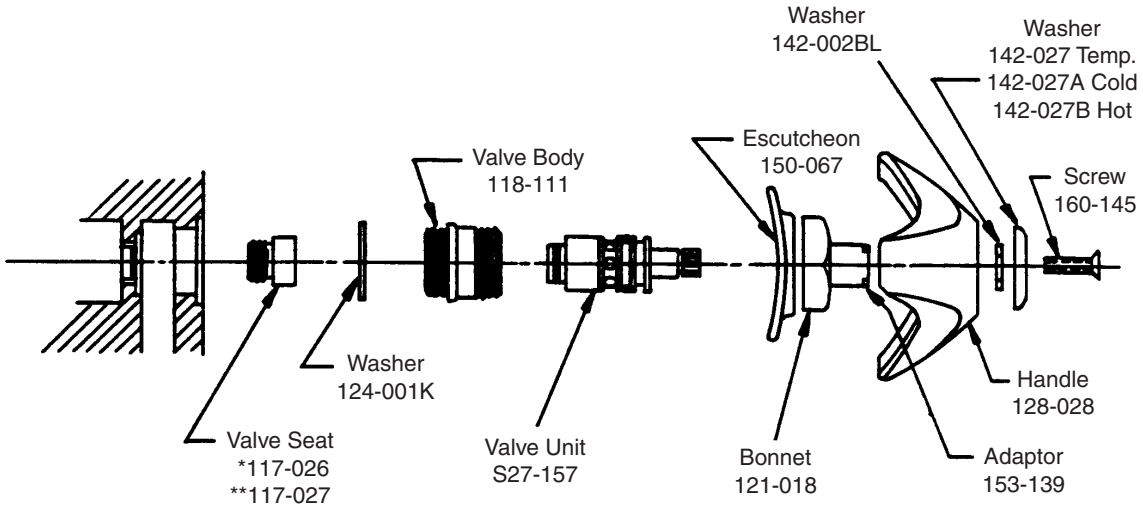
Pos-I-Pak Valve (Figure 31)

(Obsolete)

NOTE: To convert to current style compression, order S45-849✞ for columns — S45-850✞ for wall mounted.
✞ Does not include handle, screw or index washer.



*For Wall-Saver, Econo-Wall and Panelon. **For Column Shower

S27-113 Gradual Closing Valve

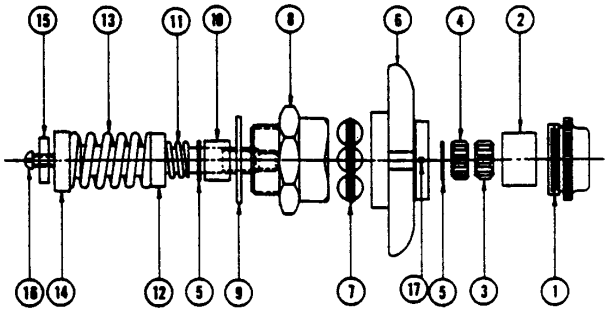
No longer available, Contact Chicago Faucet — Ref. #333-X-SLO

S27-115A Self-Closing Valve

PARTS LIST			
No.	Qty.	Part	Description
1	1	169-580	Cap Nut
2	1	169-581	Samson Nut Sleeve
3	1	169-582	Samson Nut, R.H. Thread
4	1	169-583	Samson Nut, L.H. Thread
5	2	169-584	Brass Washer
6	1	169-585	Handle
7	1	169-586	Ball Race
8	1	169-587	Centerpiece
9	1	169-588	Asbestos Washer
10	1	169-589	Packing
11	1	169-590	Spring
12	1	169-591	Gland
13	1	169-592	Spring
14	1	169-593	Stem
15	1	169-594	Seat Washer
16	1	169-595	Seat Washer Screw
17	1	160-118	Set Screw

Used in Conjunction With The Following:

118-088	Valve Body
124-001K	Fiber Washer
142-028	Ecutcheon Washer
117-002	Valve Seat



Cleaning and Maintenance Instructions

IMPORTANT: Never use ordinary steel wool or steel brushes on st ainless steel. Always use stainless steel wool or st ainless steel brushes.

IMPORTANT: Do not permit salty solutions to evaporate and dry on st ainless steel.

IMPORTANT: Strongly acidic or caustic cleaners may att ack the steel causing a reddish film to appear. The use of these cleaners should be avoided.

Step 1: Cleaning stainless steel

NOTE: Rubbing should be in the direction of polishing lines.

1. Remove ordinary deposits of dirt and grease with soap and water.
2. Thoroughly rinse and dry the metal after washing.
3. Use stainless steel polishing powder to remove tightly adhering deposits.

NOTE: Sometimes the appearance of rust on stainless steel leads to the belief that the stainless steel is rusting. A steel nail or screw may cause the trouble.

4. Look for sources of rust in some iron or steel not actually a part of the stainless steel structure.

IMPORTANT: Strong alkaline or acid-based chemicals and cleaners should not be used to clean Terreon®. If these chemicals come in cont act with the Terreon® surface, wipe off the surface immediately and flush with soapy water.

Enamel

Enameled fixtures may be cleaned with any commercial detergent, liquid or powered, as long as it contains no abrasive materials which will scratch the surface.

Enameled pedestal panels and shower columns can be coated with a high grade automobile wax to protect their finish.

Shower Head Cleaning

If showerhead delivers an uneven spray, remove showerhead, disassemble, and remove foreign matter.

Shower Drain Cleaning

Drain can be cleaned with plumbers snake inserted through hand hole of column.